CYBERBULLYING ON FACEBOOK AND PSYCHOSOCIAL ADJUSTMENT IN MALAYSIAN ADOLESCENTS

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAI‘I AT MĀNOA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN

PSYCHOLOGY

DECEMBER 2016

By

Mei Sze Choo

Dissertation Committee:

Yiyuan Xu, Chairperson

Ashley Maynard

Kentaro Hayashi

Brad Nakamura

Patricio Abinales, University Representative

Keywords: Cyberbullying, Facebook, Psychosocial Adjustment, Malaysia, Adolescents

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my committee chairperson, Dr.Yiyuan Xu for his guidance in completing my dissertation. In addition, many thanks goes to Dr. Kentaro Hayashi for assisting me with the statistics throughout this journey. I would also like to thank Dr.Maynard, Dr.Brad Nakamura, and Dr.Patricio Abinales for their support and advice. This project would not have been completed, and be as detailed without their help.

This dissertation would not have been possible without the love, support, and encouragement I received from my parents, husband, and family. I do not have words to adequately describe my deep gratitude for all they have provided me be it phsysically, emotionally, or mentally as without their continuous encouragement, it would have been difficult for me to achieve this milestone.

Last not but not least, I would like thank Xander Krieg as well as Lisa Teh, my fellow peers for assisting me with formatting and statistical help when I most needed it.

Table of Contents

Abstract

Cyberbullying is a phenomenon that has attracted attention in the past decade leading to heavy research investigating its prevalence, antecedents, and consequences. However, there remained many limitations in previous studies that were not addressed. The current study extended this line of research to a non-Western context, Malaysia, and focused on cyberbullying on Facebook, the most popular social media platform among adolescents around the world. Specifically, this investigation addressed three research questions: (1.) whether experiences of cyberbullying on Facebook were common among Malaysian adolescents; (2.) how cyberbullying on Facebook was associated with psychosocial adjustment, and (3.) how the relation between cyberbullying on Facebook and psychosocial adjustment varied in accordance with factors such as characterological self-blame among victims of cyberbullying, anonymity of cyberbully, and friend support for victims of cyberbullying. Participants were 119 high school students recruited from two public high schools in Penang, and Petaling Jaya, Malaysia, who completed measures of cyberbullying and psychosocial adjustment over a period of three months, including pre-, weekly, and post-assessment. Evidence of cyberbullying happening amongst Malaysian adolescents were found in the current study. Demographic variables such as socio economic status, and gender, along with pre-measures of cyberbullying, and psychosocial adjustment were controlled before proceeding with the analyses for the remaining hypothesis. Results did not support the hypothesis that cyberbullying was prevalent in Malaysia. Correlations showed frequent usage of Facebook which was negatively related to cyberbullying. Confirmatory factor analyses supported the distinction between private and public forms of cyberbullying on Facebook. Results of regression analyses demonstrated that public and private forms of cyberbullying on Facebook were distinctly related to psychosocial adjustment. Public forms of cyberbullying on Facebook was positively associated with depression and negatively related to social

anxiety whereas private forms of cyberbullying was associated with an increase in social anxiety. Results did not support the hypotheses for characterological self-blame and friendship quality as moderators but provided evidence for the moderating role of anonymity of cyberbullies. Specifically, the interactions between public forms of cyberbullying and anonymity of cyberbullies were found for depression, social anxiety, and self-esteem, but the direction of interaction was opposite to what was predicted for self-esteem. Taken together, the findings of this study suggest that cyberbullying on Facebook happens amongst Malaysian adolescents with relatively low frequency but in both public and private forms. Furthermore, public and private forms of cyberbullying on Facebook seem to have distinct effects on psychosocial adjustment for Malaysian adolescents and some of these effects appear to vary depending on whether the victim knows the identity of cyberbullies. These results highlight the importance of identifying protective and risk factors in understanding effects of cyberbullying on psychological well-being among adolescents across different cultures.

Keywords: Cyberbullying, Facebook, Psychosocial Adjustment, Malaysia, Adolescents

A. **Introduction**

Significance and Purpose

"Rehtaeh Parsons, a 17-year-old former student, attempted suicide by hanging on April 4, 2013, at her home in Canada, leading to a coma after the decision to switch her life support machine off on April 7, 2013. Her death has been attributed to online distribution of photos of an alleged gang rape that occurred 17 months prior to her suicide, in November 2011. After the video was released, many in school called Parsons a "slut" and she received texts and Facebook messages from people requesting to have sex with her." (Wikipedia.org, Retrieved on May 10, 2013 at http://en.wikipedia.org/wiki/Suicide_of_Rehtaeh_Parsons)

Stories like Rehtaeh Parsons's are becoming more widespread and are happening to adolescents in different countries who had committed suicide due to "cyberbullying" (e.g., Kowalski, Limber, & Agatston, 2008). Similar to traditional bullying at school, cyberbullying involves intentional and harmful behavior marked by repeated engagement, and an asymmetric physical or psychological power relationship between the bully and the victim (McCarthy, Rylance, Bennett, & Zimmermann, 2001; Williams & Guerra, 2007). Unlike traditional bullying, cyberbullying makes use of a diverse range of internet technology such as emails, text, chat rooms, mobile phones, mobile phone cameras and web sites that can be employed to threaten, harass, embarrass, or socially exclude peers (Hinduja & Patchin, 2009; Patchin & Hinduja, 2006; Williams & Guerra, 2007). .

Cyberbullying has become increasingly common among the "Always- On Generation" of adolescents who have integrated internet into their daily lives (Berson, Berson, & Ferron, 2002). It has been found that over 80% of adolescents have at least one type of social media device such as cell phone or computer, and are able to access internet at a high frequency to connect with others (David- Ferdon & hertz, 2007). With the increase in electronic or online communication, the world has become closer together and there are many

benefits such as social support, identity exploration, and cross-cultural interactions (Jackson et al., 2006; Valkenburg & Peter, 2007). However, there are also risks for youth, in particular the risk of experiencing bullying and victimization in virtual world (Berson, Berson, & Ferron, 2002; Gasser, Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012). With social interactions increasingly moving from personal contact in the school classroom to virtual contact in the chat room, cyberbullying has emerged as a growing form of social cruelty (William & Guerra, 2007). The National Children's Home (2002) study conducted in Britain found that one in four children reported being cyberbullied through the usage of mobile phone or the internet, while in an Australian study of 120 students in Year 8, over a quarter said they knew someone who had been bullied via the use of technology (Campbell, 2005).

Research has shown that victims of cyberbullying experience a variety of adjustment problems. For instance, using an anonymous web based survey with 1,454 12- to 17-year-old youth, Juvonen and Gross (2008) found that students who were cyberbullied reported feeling sad and anxious. In addition, victimized youth are more likely to skip school (Wolak, Mitchell, & Finkelhor, 2006; Ybarra, Diener-West, & Leaf, 2007), have academic difficulties (Dake et al., 2003), and detentions or suspensions, or take a weapon to school (Mitchell, Ybarra, & Finkelhor, 2007). Clearly, cyberbullying can be harmful to the victim's socio-emotional well-being and their academic success (Boivin, Hymel, & Bukowski, 1995; Crick, Grotpeter, & Rockhill, 1999; Swearer, Song, Cary, Eagle, & Mickelson, 2001). However, few studies have examined cyberbullying in non-Western contexts where adolescents have increasing access to rapidly developing internet and wireless technology. Therefore, the overall purpose of the current study was to examine prevalence of cyberbullying on Facebook, the most popular social media platform, among Malaysian adolescents and how experiences of cyberbullying on Facebook may be related to Malaysian adolescents' psychosocial adjustment.

B. Definition of Cyberbullying

1.Definition

Various terms have been used to refer to bullying that occurs online such as online aggression, cyberbullying, internet harassment, and electronic aggression (Dooley, Pyzalski, & Cross, 2009; Kowalski, Limber, & Agatston, 2008; Smith, 2009). Despite the use of these different terms, there is a consensus that cyberbullying functions in a manner that is similar to traditional bullying at school, but it occurs in an online environment rather than at schoolyard (Cetin, Yaman, & Peker, 2011; Law, Shapka, Domene, & Gagne, 2012). Based on previous studies (e.g., Law, Shapka, Domene, & Gagne, 2012; Smith et al., 2008), it seems appropriate to define cyberbullying as "...an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly, and over time against a victim who cannot easily defend him or herself…" (Smith et al., 2008, p.376). Using this definition, behaviors such as sending mean, vulgar or threatening messages or images, using websites to circulate rumours or disgrace another person, or even photo-editing a girl's picture onto a pornographic body and distributing it on Facebook, can all be considered forms of cyberbullying (Shariff & Gouin, 2005). The availability and accessibility of smartphones have also resulted in other forms of cyberbullying such as taking pictures of others in compromising situations such as in the shower room, and later uploading the pictures on public platforms (Li, 2005; Raskauskas & Stoltz, 2007). For instance, in Japan, cell phone pictures of an overweight-boy, which was taken on the sly in the locker room, were distributed to many of his peers (Paulson, 2003).

Cyberbullying and traditional bullying. Despite the similarities, cyberbullying differs from traditional bullying in several ways. One of the main differences is the factor of anonymity; the victim may not know who the cyberbully is, whereas the bully is always known in traditional bullying, be it physical or relational (Belsey, 2004; Kowalski, Limber, &

Agatston, 2008; Slonje & Smith, 2008). A second notable difference is that the reach of a cyberbully's audience can be very wide and extended at an extremely fast pace, with simply a click of a button. In contrast, traditional bullying is typically only limited to a small group of people who are at the scene or share social contacts (Belsey, 2007; Cetin, Yaman, & Peker, 2011). Cyberbullying also differs from traditional bullying in that it can happen even after school hours (Cetin, Yaman, & Peker, 2011); the victim may continue to receive text messages or emails wherever they are (Slonje & Smith, 2008).

2. Prevalence of Cyberbullying

The existing literature on cyberbullying does not give a clear answer to the prevalence of cyberbullying, which differs according to age, characteristics of children surveyed, and time frame involved (Kowalski & Limber,2007). In a national survey on Internet safety and Internet violence, Finkelhor, Mitchell, and Wolak (2002) found that 6% of adolescents in the USA from Grades 6 through 10 who used the Internet reported they had been harassed online in the past year. Of youths who reported being harassed online, 33% of incidents took the form of instant messages, 32% occurred in chat room exchanges, and 19% were included primarily in e-mails. More recent studies suggest that close to 10% of 9-16 year olds in the US and Europe is involved in cyberbullying (Menesini & Spiel, 2012). Based on these large scale studies, it appears that cyberbullying may continue to increase as newer generations of children and adolescents are gaining access to more electronic devices and internet usage.

The relatively high prevalence of cyberbullying may be partly due to the lack of prevention or intervention efforts from schools. Cyberbullying presents a new challenge to schools that have not yet shown much success in tackling this problem (Tokunaga, 2010). It was clearly shown in a study conducted by Agatston, Kowalski & Limber (2007) which examined student's perspectives on cyberbullying. They found that students rarely discussed cyberbullying at school even if it's viewed as a problem, and that students did not see the

school district personnel as helpful resources when dealing with this issue. Currently, many schools do not include cyberbullying as part of typical bullying prevention programs and students are often not aware of ways to solve problems arising from cyberbullying. Parallel to the harmful effects of cyberbullying is the lack of awareness by school professionals. Due to increasing severity of cyberbullying, it is important to understand cyberbullying and its associations with adolescents' psychosocial adjustment.

C. Cyberbullying on Facebook

1. Popularity of Facebook

The growth of Facebook is rapid as a means of communication. With an estimated 1.2 million users in 2006 (Needham and Company as cited in Spitzberg, 2006), Facebook grew to 21 million members in 2007 (Needham and Company as cited in Ellison et al., 2007), and has reach 1.2 billion in 2013 (Liszewski, 2013). Considering the types of information that are a part of a Facebook profile such as which high school a person attends and which association they are a part of, past research has shown that the majority of Facebook contacts are known from the offline world such as in school (Kwan & Skoric, 2013). Information that is specific to the high school a person attends encourages previously known friends and acquaintances to find them (Ellison et al., 2007). It is through Facebook that adolescence can now express themselves freely without being directly confronted by peers.

2.Popularity of Facebook in Malaysia

Similar to most other East and Southeast Asian cultures, Malaysian culture has been traditionally characterized by a group orientation and interpersonal interdependence. Although marriage traditions, rituals, and family life remain distinct among different ethnic groups, which includes Malays, Chinese and Indians (Kukreja,2001), the Malaysian culture as a whole emphasises values on courtesy, moderation, tolerance, harmony, and cordial relations among family members, neighbours and community (Magnis-Suseno, 1997).

Malaysia emerged out of territories previously colonized by Britain in the late nineteenth and early twentieth century's.

Despite the Western influence, Malaysia gained independence in 1957 and was reformed by the Malay government to integrate the cultural values of the three main ethnicities in order to build a national identity. All three ethnicities were free to embody and transmit their own ethnic values and practices from generation to generation but still remain tolerant and respectful of each other in a multiethnic context. The unity in diversity can be seen in the celebration of various festivals (e.g., "Hari Raya" celebrated by the Malays, "Chinese new year" by the Chinese and "Deepavali" by the Indians) by all races in Malaysia. Therefore, Malaysia is viewed as a highly collectivist society and still embody social oriented values such as interdependence, relatedness and loyalty to the group with a focus on group connectedness (Hofstede, 2001; Matsumoto, 2000).

Malaysia, being a developing nation with a cosmopolitan outlook amongst the citizens who are as savvy as the west in terms of technology, has one of the highest Facebook users in Asia. For instance, Malaysia is ranked number 17 in the world for the number of Facebook users in the country with a penetration rate of 73.80% among the online population (www.socialbalkers.com). A survey of 5446 students from major universities and colleges by Malaysia Youth College Magazine in 2012 found that 100 % of Malaysian youths surveyed logs on to Facebook on a daily basis. Furthermore, Roslam (2011) found that the main reason Malaysian adolescents logged on to Facebook was to communicate with their peers and to find old friends.

3. Cyberbullying on Facebook

Given that Facebook currently represents the most popular social media platform for adolescents across the world, it may have become a popular tool for cyberbullies not only in the United States but also in South East Asian countries like Malaysia. The reach of

Facebook is wide because any comments or pictures posted can reach thousands of friends. Furthermore, friends of friends and the public can see the postings on Facebook in an instant. It is through Facebook "sharing" and "liking" mechanism that allows cyberbullies to distribute nasty or unwanted information about their victims easily. These types of social interaction on Facebook may be referred to as *public* cyberbullying. If it is interesting enough, peers on Facebook will continue sharing it to their own network of friends resulting in very quick distribution amongst not only peers, but friends of peers. Sharing on Facebook is detrimental to the victims of cyberbullies especially when it is seen by more than friends, but friends of friends. In addition to public cyberbullying, there is also a more *private* form of communication on Facebook which is through private messaging. For those who want to taunt their victims without showing it to the public, they can send an instant message to the victim who is only seen by both the cyberbully and victim. The "seen" function on the private message indicates that a message has already been seen. Thus, a cyberbully can continuously send hurtful messages to the victim immediately after each message is seen.

Unlike traditional bullies at school, cyberbullies on Facebook may not need to face any ramifications by adults because there is often no rule forbidding them to harm their victims online. It is often challenging for parents or teachers to track bullying that is happening online as they have yet to adapt to new online environments (Ribak, 2001). Socially dominant adolescents who are cyberbullies can garner more support from friends on Facebook when they gossip or make snide remarks about a peer through Facebook. The impact is greater on Facebook because it is seen by millions around the world if the victim's profile is public. A recent study of Singaporean secondary school students examined how cyberbullying on Facebook was related to school bullying. The results showed that the intensity of Facebook use and engagement in risky Facebook behaviors were related to being victimized on Facebook and also being a Facebook bully, respectively (Kwan & Skoric,

2013). The study also uncovered positive relations between school bullying behavior and Facebook bullying beahvior, as well as between experience of being victimized at school and that of being victimized on Facebook. Clearly, there was a need to (1.) investigate how victims of cyberbullying adjusted to public and/or private cyberbullying on Facebook, and (2.) to understand how experiences o being bullied on Facebook was related to adolescents' psychological functioning.

4. Cyberbullying on Facebook and Psychosocial Adjustment

Previous studies have shown that victims of cyberbullying suffered significant psychological harm like feeling threatened and distressed (National Center for Missing & Exploited Children, 2000). Severe cases have led some adolescents to commit suicide when they were no longer able to cope with the abuse (Meadows, 2005, March 14). Victims of cyberbullies on Facebook may fare worse than victims of other online bullying due to the uniqueness of Facebook as a communication platform. First, if a person hurls insults on their victims on Facebook, it reaches a wide audience quickly. Second, the insult posted by the perpetrator can be there forever if he/she does not remove it. Finally, anything can be shared on Facebook from videos, messages, photos, to private messages, allowing different modes of communication on one platform. Thus, a victim can be publicly humiliated if the perpetrator publicly posts an insult on their news feed, as well as receives nasty personal private messages every second from the perpetrator. Due to the frequent use of Facebook in the lives of Malaysian adolescents (Roslam, 2011), it would be very difficult for victims to avoid being hurt by cyberbullying on Facebook.

Cyberbullying can have real and devastating impact on its victims, especially if it's conducted on Facebook. In 2008, a 16-year-old Singaporean girl was found to create fake profiles on Facebook, to befriend people whom she disliked in school. After making friends with them online, she started hurling insults at them (Tan, 2008). The school discovered what

she was doing and she was stopped before the victims suffered deeper emotional scars (Tan, 2008). Another study conducted by Kwan and Skoric (2013) also revealed that the vast majority of its participants from Singapore–more than half of them had experienced at least one form of Facebook bullying in the past year, with some engaging abusive actions on the platform. The study also showed that the victims of Facebook bullying had lower perceived popularity and self-concepts.

Studies cited both in the United States (e.g., Hinduja & Patchin,2008), and in Asia (Kwan & Skoric,2013) have studied cyberbullying, and its effects amongst adolescents. However, a recent study conducted on cyberbullying amongst young adults (N = 393; 17–30 years old) in Malaysia showed that the rate of cyberbullying is still present after the schooling years. Still, younger participants were found to engage more in cyberbullying activities (i.e. victims and perpetrators) than the older participants. It is clear that the adolescent period is still an important time point to examine the presence of cyberbullying and its effects on the victims. Besides examining Malaysian adolescents, the current study will also incorporate an important transitional period for the adolescents which is from form three (Grade 10) to form four (Grade 11) in Malaysia which is similar to the transition from middle to high school in North America.

5. Aims of the Current Study

There were three aims of the current study. Given the popularity of Facebook in Malaysia, the first aim was to examine the prevalence of cyberbullying on Facebook, among Malaysian adolescents. The second aim was to examine how frequency of being bullied on Facebook may be related to Malaysian adolescents' psychosocial adjustment. The third aim of the current study was to investigate how the relation between cyberbullying and psychosocial adjustment was moderated by factors that may either exacerbate or lessen the effect of cyberbullying.

The current research adopted a microgenetic design to assess experiences of cyberbullying and psychological adjustment over a transitional period from form 3, right after their major examination which streamed them into different classes, be it art based, science based or mixed arts and science, to form 4 (equivalent to transitioning from middle school to high school in the United States). Studies have shown that during the transitional period some adolescents tend to exert more dominance, such as bullying behavior to raise their statuses from their previous schools (Pellegrini & Bartini, 2001). Furthermore, examining behavioural changes during transitional periods can help us understand why and how certain behaviors such as cyberbullying evolve within a short period of time (Lavelli, Pantoja, Hsu, Messinger & Fogel, 2008. Therefore, there was an elevated density of observations within the transition period whereby the current study included weekly assessments for three consecutive months, inclusive of pre- and post-tests, so that the relation between experience of cyberbullying and adjustment of cybervictims can be systematically examined.

D. Literature Review

1. Cyberbullying and Adjustment of Cybervictims

Many studies have highlighted the negative outcomes experienced by victims of cyberbullying (e.g., Berson, Berson, & Ferron, 2002; Gasser, Maclay, & Palfrey, 2010; Mishna, Khoury-Kassabri, Gadalla, & Daciuk ; William & Guerra,2007), who tend to exhibit a variety of physical, mental, interpersonal, and academic problems (Ko et al. 2012; Shapira et al. 2000; Young and de Abreu 2011). For instance, cybervictims tend to experience difficulties in school with their academic performance, social competency, and life at home (Dake et al., 2003; David-Ferdon & Hertz, 2007). It could be that victims do not perform well in school because their online experiences can be transferred to feelings of insecurities, low self-esteem, and the fear of cyberbullying. Similar results were found in Mitchell, Ybarra, & Finkelhor (2007) study involving 1501 youths between the ages of 10 and 17. For the youths

in the study who had used the internet at least once a month for the previous 6 months, online victimization was found to be related to depressive symptomatology, high delinquency, and high substance use after adjusting for demographic characteristics and life adversity in a logistic regressions model.

Victims of cyberbullying have also been connected to the development of general psychological distress and negative psychosocial adjustment (Johnson, 2009; Kochenderfer-Ladd & Skinner, 2002; Nansel et al., 2001). Finkelhor et al. (2000) found that among youths who had been harassed on the Internet in the previous year, almost one third (32%) reported at least one symptom of stress after the incident. In addition, additional 31% reported being very or extremely upset, 19% were very or extremely afraid, and 18% were very or extremely embarrassed by the online harassment. Other research has shown that repeated acts of cyberbullying can threaten healthy development of self-esteem in victims of cyberbullying, depression and anxiety, while the worst effects is seen in adolescent suicide (Raskauskas & Stoltz, 2007; Ybarra & Mitchell, 2004). Thus, it would be imperative to examine how experiences of cyberbullying may be related to psychosocial adjustment of cybervictims over an extended period of time (three months in the current study).

2. Differentiating Public and Private Forms of Cyberbullying on Facebook

Bullying behavior is often motivated by the bullies' pursuit of high status and a powerful, dominant position in the peer group (Pellegrini, 2002; Salmivalli & Peets, 2008). Thus, peer witnesses and how they react toward the bullying incident play an important role in either spurring the bully on or solving the problem (e.g., O'Connell, Pepler, & Craig, 1999; Salmivalli et al., 1996). For example, having others join in the bullying and even getting subtle positive feedback (e.g. smiling, laughing) is probably rewarding for those who are doing the bullying, whereas challenging the bully's power by taking sides with the victim provides negative feedback for them.

The fact that bullying occurs when bystanders are present led researchers to ask how these bystanders react during such episodes, and how their reactions might either contribute to the problem or help resolve it (e.g., Hawkins, Pepler & Craig, 2001; Salmivalli et al., 1996). By using peer nomination procedures, it has been found that the audience play multiple roles such as assistants of bullies, reinforces of bullies, outsiders and defenders of victims (Salmivalli et al., 1996). Bystander effect is a phenomenon that refers to cases in which individuals do not offer any means of help to a victim when other people are present and has been associated with peer victimization as well (Darley & Latane,1968). It has been investigated at a classroom level whereby the more classmates tend to reinforce the bully the more frequently bullying takes place in a school classroom. In contrast, classroom levels of supporting and defending the victims thwart the bully. In short, bystanders can contribute to the maintenance of bullying by assisting and reinforcing the bully, which provides bullies with the position of power that they seek. Conversely, defending the victim may make bullying an unsuccessful strategy for attaining and demonstrating high status (Karna et al., 2011). Besides, victims in classrooms where there are high levels of reinforcement for bullying behavior and low levels of defence for the victims, tend to develop social anxiety and are often rejected by peers (Karna, Salmivalli, Poskiparta, & Voeten, 2008).

The effect of bystanders on the adjustment of victims may also be found in cyberspace such as Facebook. If “news” of cyberbullying is made public, they can easily and quickly reach a large audience of “cyber” bystanders on a public cyberspace like Facebook, leaving the victim no place to hide. As mentioned above, public forms of cyberbullying on Facebook often involve online posting of a “nasty” comment or uploading a derogatory picture of the victim that can quickly reach a wide audience. When experiencing cyberbullying on Facebook publicly, the victim may particularly worry about the likelihood that cyber-bystanders, including his/her friends, as well as other people who connect to

his/her friends, may spread the comment or picture online. In a related study investigating whether participants especially southerners would perceive a public insult as damaging to their reputation and status in the presence of a bystander, the experiment which used confederates to bump into southerners and northerners from the United States found that publicly insulted participants felt that their reputation was damaged in the eyes of the person who saw the insult, particularly male Southerners who embody the culture of honour(Cohen et al., 1996). The same could be applied to cyber-victims who are publicly humiliated on Facebook as the fact that others are looking at the postings is damaging the victim's reputation and status. In addition, similar to Southerners, the Muslim culture focuses on honour and shame, stressing conformity to the Muslim,i.e., Syariah law (Landes,2007). Thus, Malaysians, particularly the Muslim participants who are publicly humiliated could possibly feel more insulted than their Chinese and Indian peers in Malaysia as being cyber-victimized damages their reputation and put them to shame.

On the other hand, private forms of cyberbullying, i.e., cyberbullying on Facebook through private chat or messaging, typically do not result in exposure to a wide audience or cyber-bystanders. In addition, a victim's reputation cannot be damaged because the communication is between two people only allowing the victim to retain their honour and not be deemed as weak (Cohen et al., 1996). A focus group study conducted across six European countries by Menesini and colleagues (2012) indicated that public cyberbullying was rated as more serious by students because of the presence of cyber-bystanders.

As the presence of bystanders often contributes to aggressive, risk-taking and delinquent behavior (Modecki 2009; Monahan, Steinberg, & Cauffman, 2009), the existence of a wider audience or cyber-bystanders may present a significant risk for the adjustment of cybervictims. Based on previous studies conducted on bystander influences on traditional bullying, public forms of cyberbullying on Facebook can similarly hurt a victim more as the

perception of a constant audience of peers is particularly damaging and the victims worry about what others think of them (Nocentini et al.,2010; Runions et al., 2013). For instance, the number of "likes", "shares", and comments a cyberbully gets on a post that harasses a victim publicly may positively reinforce the bully to continue harassing the victim on Facebook. In addition, the Swedish focus groups in Menesini et al's (2012) study showed that public forms of cyberbullying was seen as a bigger problem when bystanders access embarrassing material on the internet than if the target was the only recipient (Berne & Frisen,2011). Given that private forms of communication happen only between the perpetrator and the victim, it seems plausible that victims of private forms of cyberbullying may adjust better than those who are susceptible to public forms of cyberbullying.

Despite the severity of cyberbullying on Facebook and the potential negative consequences on cybervictims, the impact of cyberbullying may vary depending on other moderating factors that have yet to be studied, such as self-blaming tendencies of cybervictims, anonymity of the cyberbullies, whether cyberbullying publicly or privately targets victims, and online friend support for cybervictims. Below, I reviewed the roles these moderators may play in the relation between cyberbullying and psychosocial adjustment of cybervictims.

3. The Moderating Role of Characterological Self-Blame Among Cybervictims

While the negative consequences of cyberbullying have been well documented, it is still unclear why some cybervictims adjust better than others. According to the *social information processing (SIP) model* (Crick & Dodge, 1994 ; Dodge & Price, 1994), individuals may cope with negative experiences in different ways due to their unique ways of understanding and attributing the causes of the incident. Prior studies on social attributions demonstrated that some children interpret cues from benign, ambiguous social situations as being negative and will attribute other children's behaviors to hostile intent (Dodge,Pettit,

McClaskey, & Brown, 1986; Gouze, 1987). Children with hostile attributions are more likely to display externalizing difficulties such as aggression compared to children who do not have hostile attributions (Dodge, 1980). On the other hand, a child may also attribute the event occurring as a result of an internal self-referent attribute (e.g., "I am not fun to play with"). The latter attribution style has important implications for internalizing symptoms as these youth may consistently perceive the occurrence of negative situations as a result of something internal. In general, youth who make internal/global/stable attributions may consistently perceive the occurrence of negative situations as a result of something internal.

Youth who make internal (e.g., blaming themselves for negative events), global (e.g., generalizing across situations), stable (e.g., viewing the cause of the event as being consistent over time) attributions are at risk for developing psychological problems (Kaslow, Stark, Printz, Livingston, & Ling Tsai, 1992; Kendall, Stark, & Adam, 1990). For instance, Panak and Garber (1992) found that the tendency to make internal, global, and stable attributions predicted depressive symptoms in children a year later. In contrast, negative events ascribed to controllable factors such as low effort will elicit feelings akin to guilt and the motivation to redress past wrongs (see Weiner, 1986, 1995).

In line with the attribution theory, researchers have found that some children who experiences negative life events, may develop internalizing or critical self-referent causal attributions referred to as characterological self-blame (Crick & Dodge, 1994; Janoff-Bulman, 1979; Prinstein et al., 2005; Sacco & Nicholson, 1999). A study that examined characterological versus behavioural self-blame for victimization and maladjustment in middle school students found that self-perceived victimization was associated only with characterological self-blame(Graham & Juvonen,1998). As defined by Janoff- Bulman, "…characterological self-blame is esteem related, involves attributions to a relatively non-modifiable source (one's character), and is associated with a belief in personal deservingness

for past negative outcomes…" (p, 1979). An example of characterological self-blame would be the reference to internal global attributions that children make in social situations (e.g., "Those kids in the hall are laughing because I am a loser") rather than hostile attributions (e.g., "Those kids in the hall are laughing because they are trying to make me mad") which is debilitating because it makes an individual feel both hopeless and helpless (Weiner 1986). In addition, adolescents have shown to displayed more depression when attributing school failure and social failure to something about their character (Cole, Peeke & Ingold, 1996).

Graham and Juvonen (1998) developed a measure of characterological self-blame in their study of peer victimization among sixth and seventh grade students. They found that youth who attributed negative peer stressors to internal and stable causes yielded higher scores on measures of loneliness and social anxiety and endorsed significantly more characterological self-blaming attributions, compared to non-victims. Furthermore, the more students with reputations as victims blamed themselves for their plight, the more likely they were to report psychological adjustment problems such as social anxiety, loneliness and low self-esteem. Thus, victims endorsed certain feelings, beliefs and behavioural intentions compared to non-victims that were associated with attributions for failure.

The current study sought to investigate characterological self-blame as a moderator between experience of cyberbulling and psychosocial adjustment. Many researchers have shown that individuals who make characterological self-attributions for negative outcomes cope more poorly, feel worse about themselves, and are more depressed than are individuals who attribute outcomes to their own actions (e.g., Anderson, Miller, Riger, Dill, & Sedikides, 1994; Graham & Juvonen,1998). Cyber-victims are no less damaged by online aggression targeted at them than traditional bullying, and cyber-victims also experience psychosocial difficulties (David-Ferdon & Hertz, 2007). As many adolescents spend more time online and are increasingly cyber-victimized (Wolak, Mitchell & Finkelhor, 2006), these painful

encounters online may lead the victim to ask "Why me?" which can lead to negative outcomes such as low self-esteem and depression (Graham, 2006). Furthermore, most parents and teachers do not know how to deal with problems arising from cyber-victimization and prevention programs are lacking not only in the United States but also Asia (David-Ferdon & Hertz, 2007). Cybervictims who tend to blame themselves are expected to adjust more negatively in contrast to cybervictims who attribute being cyber-bullied to unstable and controllable causes such as one's own behavior. Thus, experiences of cyberbullying may lead to worse psychosocial adjustment among cybervictims with higher levels of characterological self-blame.

4. The Moderating Role of Anonymity of Cyberbullies

In traditional forms of bullying, the perpetrator is easily identifiable, whereas the power of cyberbullies partly comes from their competence with technology and the ability to hide one's identity (Patchin & Hinduja, 2006). Relatedly, one of the criterions for traditional bullying is power imbalance where the victim feels powerless and finds it difficult to defend oneself (Olweus, 1993; Smith & Brain, 2000). This criterion is not altered in cyberspace but may vary in the way in which someone is powerless in comparison with another. One factor that contributes to the power imbalance between the perpetrator and the victim is anonymity (Smith & Steffgen, 2013). It has been shown that anonymity in cyberspace increases feelings of frustration and powerlessness (e.g., Slonje & Smith, 2008), because the anonymous bully knows their victims well whereas the victim is unaware of the bully's identity, making their coping with such experience particular challenging (Kowalski & Limber,2007). Cybervictim often are not able to defend themselves effectively when the identity of the bully is not known (Vandebosch & Van Cleemput, 2008).

The negative effect of anonymity is also shown in the cyberball paradigm which is linked to acceptance and ostracism in a group setting (Williams & Jarvis, 2006). The

cyberball paradigm is an online ball-tossing game where participants believe they are playing with two or three others but the "others" are controlled by the programmer. Through this online game, researchers have found that regardless of the fact that they are playing with people that might not have existed and with fictitious others whom they did not know and whom they did not expect to meet, fully ostracized participants who answered a post-experimental questionnaire indicated lower levels of belonging, self-esteem, control, and meaningful existence (Zadra, William & Richardson, 2004). From the cyberball experiments, it is clear that rejection from anonymous individuals has deleterious effects on participants. Relating to cyberbullying, the hurt caused by a cyberbully who is anonymous may exacerbate adjustment problems of victims as they are wondering the possible reasons that they are being bullied and the frightening part that the perpetrator knows more about him/her than the other way around.

Many studies have demonstrated how the anonymity of cyberbullies may worsen adjustment problems of cybervictims. In a study of 84 adolescents' involvement in traditional and electronic bullying, Raskauskas and Stoltz (2007) found that some participants who did not know the identity of their aggressor said that it made them suspicious of those around them and fearful to go to school. This was most likely due to the victims being incapable of responding to their aggressor, a lack of confidence or feelings of suspicion in social support, and the lack of control to stop the bullying behaviors. Similarly, Kowalski and Limber's (2007) examined the prevalence of cyberbullying among 1915 girls and 1852 boys in grade 6, 7, and 8 middle schools students in North America. They found that almost half of the participants did not know the identity of the perpetrator. Due to the anonymity of their cyberbullies, cyber-victims were afraid of going to school, worrying about that the perpetrators could be one of their peers. With increasing mistrust in their peers, cybervictims

may gradually lose their most importance source of social support, making them more socially anxious even with friends.

As pointed out by David-Ferdon and Hertz (2007, p S3), "…the anonymity provided by new technology limits a victim from responding in a way that may ordinarily stop a peer's aggressive behavior or influence the probability of future acts…" With more social media platforms that allow victims to be attacked at any time and in any place by any unknown person, a cyberbully could repeatedly and uncontrollably harass a victim while remaining anonymous by putting a pseudonym with no picture on their untraceable profile. The anonymity of cyberbullies not only leads to increasing anxiety and fear among cybervictims, but also making the prevention particularly challenging. For example, parents, teachers, and other trusting adults will not be able to rationalize with, punish, or ban bullies from committing cyberbullying acts without knowing their identity. The possibility of a victim developing depressive symptoms is particularly higher when the cyberbully is unknown, due to the lack of control to address the issue (Huang & Chou, 2010). In contrast, if one knows the identity of their cyberbullies or are familiar with their online persona, they have more options to stop the cyberbully such as blocking the cyberbully on social network sites or chat rooms, or changing his/her identity in cyberspace.

Taken together, it appears that the anonymity of cyberbully may lead to more adjustment problems in cybervictims. It is then predicted that cybervictims who did not know the identities of their bullies on Facebook would experience higher levels of internalizing problems such as depression, anxiety, and lower levels of self-esteem.

5. The Moderating Role of Friend Support for Cybervictims

In the social process model proposed by Boivin, Hymel and Hodges (2001), they argued that "...peer attitudes are communicated primarily through peer behavior toward certain children (e.g., peer harassment) and that it is through these manifest conditions that

the children come to *experience* peer rejection and, as a result, to develop negative self-perceptions" (Boivin, Hynel & Hodges, 2001, p301). Thus, negative self-perceptions (e.g., loneliness, low self-esteem) emerge as a result of multiple direct or indirect influences, with peer harassment playing a central and pivotal role in the process (Boivin & Hymel, 1997). If an adolescent has problematic social behavior to begin with, it may reciprocally influence peer harassment over time making it difficult for an adolescent to escape without any support from a best friend. Furthermore, aggressive children may prefer to attack friendless children, because there would be little risk of retaliation from others (i.e., potential for retaliation becomes primarily limited to the target (Bovin, Hymel & Hodges, 2001).

Many studies have supported the role of friendship quality as a buffer to peer harassment. To illustrate the proposed processes through which friendships might reduce the likelihood of peer harassment (Boivin & Hymel, 1997), children (188 boys and 205 girls) in the fourth and fifth grades (Year 3 of the QLSC; *M* age = 10.6 years) were assessed on multiple dimensions such as children's internalizing and externalizing behaviors, reciprocated best friendships, and the degree to which their reciprocated best friend stuck up for them during conflicts (Boivin, Hymel, & Hodges, 2001). Results of hierarchical multiple regression analyses supported the proposed protective function of friendship; having a best friend significantly reduced children's likelihood of being victimized over a 1-year period. Another important finding was that, for children with a best friend, the degree to which children's friends came to their rescue during attacks from others moderated the relation of internalizing behaviors to changes in peer harassment.

It is clear that the presence of a best friend, then, can provide benefits such as companionship, intimacy, and emotional support (e.g., Bukowski, Hoza, & Boivinl., 1995), and limits the effects of peer harassment on children's adjustment out comes, such as internalizing and externalizing problems. It was illustrated in a study conducted by William

and Guerra (2007) on 3339 youths where they investigated the prevalence of Internet bullying with physical and verbal bullying among elementary, middle, and high school boys and girls. The study suggested that positive school climate and friend social support are negatively related to verbal, physical and cyberbullying. Friendships in particular are believed to serve many functions, including informing persons of their value, promoting the exploration and acquisition of new skills, and providing a protective buffer against negative factor (Bukowski, et al.,1995). Hodges, Boivin, Vitaro, and Bukowski (1999) studied two aspects of friendship which were *presence* and *perceived quality of friendship* as moderators of behavioural antecedents and outcomes of peer victimization with 393 4th to 6th grade children. Results showed that the relations of internalizing and externalizing problems were exacerbated when the children had fewer friends and are also more vulnerable to increased victimization over time as it is a one year longitudinal study. However, it is suggested that the quality of these friendships makes a difference as to whether the friendship will serve in a protective capacity. High quality, lasting friendships are characterized by intimacy, self-disclosure, validation have been associated with positive self-esteem and promote adaptive coping during this period (Berndt et al., 1999; Lord, Eccles, & McCarthy, 1994). Bad quality friendships on the other hand have lower levels of intimacy and companionship (Vernberg, Abwender, Ewell, & Beery, 1992). Therefore, for friendship to be an effective buffer against victimization, the quality of a friendship plays an integral role in protecting a child against the negative effects of peer victimization.

Although online social norms may differ from traditional modes of communication such as “make positive responses to each other, refrain from blunt criticisms of each other [or] to listen attentively to each other” (McLeod et al., 1997; Runion, 2013), one thing that remains the same is that face-to-face friendships will also be transferred online. Online communication can happen 24 hours anytime and at any place which can also lead to “non-

stop bullying" (Mishna et al. 2009, p. 1224). However, high quality friends from school or existing offline surroundings can protect and stand up for their friends by commenting on a post that was meant to hurt the victim. Most cyber-bullies will continue to taunt, and bully a person if they receive positive appraisals on their Facebook post such as "likes" , "shares", and support from their peers, but high quality friends of the victim can comment to support their friend who is victimized, and to instil guilt into the bully or to correct a particularly nasty comment made. Because bullies in general are perceived to be popular and powerful many will not dare to stand up to the bully and do not want to be associated with the victim who is seen as lower in social status (Salmivalli, 2010). However, it could take only one or two positive comments on a Facebook post to thwart off bullies and their supporters as children's attitudes towards victims might be influenced by observing each other's reaction (Gini, Pozzoli, Borghi, and Franzoni, 2008). Through this support by a good friend, the perpetrator may be informed that s/he is doing or has done something wrong (Haidt 2003), and that is, something that violates one's own moral sensibilities. Based on the aforementioned reasoning, high quality friendship might then serve as a buffer for cyberbullying as well.

The current study explored the potential protective factor of Facebook friend support on cyber-victims. Specifically, I examined whether perceived Facebook friend support would play a moderating role and decrease the negative impact of cyberbullying. It was expected that cybervictims with stronger Facebook friend support were likely victimized more often and exhibited higher adjustment problems than those with weaker support from Facebook friends.

E. Summary of Hypotheses

Aim 1: Prevalence of cyberbullying on Facebook in Malaysian adolescents. The first aim of the current study was to explore the prevalence of cyberbullying on Facebook among

Malaysian adolescents. Although much research has been conducted on cyberbullying in recent years (Menesini & Spiel, 2012; Raskauskas & Stoltz, 2007; William & Guerra, 2007), there has been a few limitations in the literature. One of the main limitations was that cyberbullying had been studied as a single phenomenon with cyberbullying on different social media platforms lumped together. Based on previous studies on traditional bullying, research has shown that aggression is multidimensional, multifaceted and complex. Using the same "one size fits all" principle, researchers and educators approach to reducing cyberbullying is to use the same solutions as they employed for traditional bullying (Law et al., 2012). However, the nature of cyberbullying may vary depending on specific online social contexts. A survey conducted by the Pew Research Center (2013) indicated that teenagers share a wide range of information on social media sites but tweak it based on individual social media platforms. For instance, they post more photos of themselves on instagram, but express opinions on twitter. Yet, previous studies (Law, Shapka, Domene, & Gagne, 2012; Li, 2007; Slonje & Smith, 2008) collapsed cyberbullying across diverse social media such as Facebook, emails, websites, and videos, and did not specifically focus on one particular online platform such as Facebook. Therefore, the present research aimed to investigate cyberbullying on Facebook given its popularity among Malaysian adolescents and its diverse social functions which includes peer liking, friendship making, sharing of photos, videos, and instant messaging,.

Aim 2: Associations between private and public cyberbullying on Facebook and psychosocial adjustment. The second aim of the study was to examine the relation between public and private cyberbullying on Facebook and psychosocial adjustment among Malaysian adolescents. Many studies have highlighted the negative outcomes experienced by victims of cyberbullying (Berson, Berson, & Ferron, 2002; Gasser, Maclay, & Palfrey, 2010; Mishna et al., (2012); William & Guerra,2007), who tend to exhibit a variety of physical, mental,

interpersonal, and academic problems (Ko et al. 2012; Shapira et al. 2000; Young & De Abreu 2011). As mentioned above there are both public and private forms of cyberbullying on Facebook (Law et al., 2012) which may lead to different experiences and reactions of cybervictims. Public forms of cyberbullying on Facebook often involve online posting of a "nasty" comment or uploading a derogatory picture of the victim that can quickly reach a wide audience. When experiencing cyberbullying on Facebook publicly, the victim may particularly worry about the likelihood that his/her friends, as well as other people who connect to his/her friends, may spread the comment or picture online. In contrast, cyberbullying on Facebook through private chat or messaging seem to resemble traditional bullying and typically do not result in exposure to a wide audience. While previous research had shown the detrimental effects of public forms of cyberbullying on victims with some leading to adolescent suicide (Li et al.,2013; Slonje & Smith, 2008; Snider & Borel,2004), no studies had differentiated the impact of public and private cyberbullying on Facebook. Thus, the current study also examined how different forms of cyberbullying (public or private) would be differentially associated with adjustment of cybervictims.

Hypothesis 1: *While both public and private cyberbullying were expected to be related to adjustment problems, compared to private cyberbullying, public cyberbullying on Facebook, were expected to be more strongly associated with psychosocial adjustment problems.*

Despite the severity of cyberbullying on Facebook and the potential negative consequences on cybervictims, the impact of cyberbullying may vary depending on other moderating factors that had yet to be studied, such as self-blaming tendencies of cybervictims, anonymity of cyberbullies, and online friend support for cybervictims. Therefore, the proposed research not only investigated the relations of cyberbullying to victims'

psychological adjustment, but also examined how these relations varied depending on the effects of moderators.

Aim 3.1: Characterological self-blame as a moderator. Research conducted with traditional bullying has shown that individuals who make attributions to a non-modifiable source such as one's own character for negative outcomes, i.e., characterological self-blame, cope more poorly, feel worse about themselves, and are more depressed in comparison to non-victims (Anderson, Miller, Riger, Dill, & Sedikides, 1994; Graham & Juvonen,1998; Janoff-Bulman,1992). Thus, it was reasonable to infer that cybervictims of Facebook bullying with characterological self-blame may would fare worse than those who did not blame themselves for the experience of cyberbullying. Clearly, it was important to understand the way how Malaysian cybervictims' characterological self-blame may moderate the relation between cyberbullying and psychosocial adjustment. .

Hypothesis 2: It was hypothesized that cybervictim who blamed more him/herself for being cyberbullied would fare worse than those who attributed experience of cyberbullying less to their own attributes.

Aim 3.2: Anonymity of cyberbullies as a moderator. One must consider how an online environment may worsen or protects cyber-victims from developing maladaptive behaviors (Sroufe & Rutter, 1984; 2000). This question pertains to anonymity of cyberbullies. For instance, it has been shown that victims of cyberbullying started becoming fearful of going to school as they did not know who among their peers cyberbullied them (Raskaukas & Stoltz, 2007). The association between anonymity of the cyberbully and negative psychosocial adjustment was shown in the aforementioned study because being fearful of going to school can lead to peer rejection, anxiety, and other negative outcomes for the victim. Therefore, the study investigated whether anonymity of cyberbullies acted as a moderator between experience of cyberbullying and psychosocial adjustment.

Hypothesis 3: The experience of being bullied on Facebook was expected to be associated with higher levels of adjustment problems among adolescents who were more often bullied by anonymous cyberbullies.

Aim 3.3: Facebook Friend support of cybervictims as a moderator. A cybervictim's adjustment may be contingent upon the quality of his or her relationships with friends (Fanti, Andreas, Demtriou & Hawa, 2012; Pellegrini & Long, 2002). Often times, it is not about the number of friends that a child/adolescent has, but rather the quality of friendship. If victimized children have friends who also tend to be victimized, weak, and have internalizing problems, they cannot provide support or assist in thwarting bullies (Hodges & Perry, 1999). However, if the friend possesses certain qualities such as being able to stand up for their friends rather than being a bystander, then friendship can act as a buffer for victimized children or adolescence. For instance, a study conducted to investigate friendship quality as a moderator of risk factors in peer victimization found that children who had lower quality friendship had more internalizing problems and were victimized more often (Bollmer, Milich, Harris, & Maras,2005). Building from previous research, the current study investigated online friend support as a protective factor against developing negative psychosocial adjustment for cybervictims.

Hypothesis 4: The associations between cyberbullying and adjustment outcomes were expected to be weaker among cybervictims with stronger Facebook friend support.

F. Method

1. Participants

Participants were 119 Grade 11(known as Form 4 in Malaysia) students (54 girls; *M* = 16.00 years; *SD*=.50) from one public school from Petaling Jaya (School 1) and one public school from Penang (School 2) in Malaysia. Petaling Jaya has a total population of 619,925 (Petaling Jaya City Council, 2015) and is known as one of the leading growth centres in

Selangor, one of the thirteen states in Malaysia; while Penang has a total population of 1.65 million (Penang Institute, 2013). The sizes of the classrooms ranged from 20 to 40 students per class and there was one main teacher for each classroom. An important difference between the two schools besides its location is the concentration of ethnicities. There are more Chinese and Indians in the public school in Penang because it is a Christian run public school, while the public school in Petaling Jaya comprised of a balance of Chinese, Indians and Malays as it's a government public school.

The participants comprised mostly of the three main ethnicities in Malaysia; the Malays (n = 30) who are predominantly Muslims; the Chinese (n = 76) who are primarily Buddhist, Christian, Taoist, or followers of Confucianism, and the Indians (n = 9) who are mostly Hindus or Christians, and 4 of mixed ethnic heritage. About 10% of the students were only child in their family while the rest of the students had siblings. In comparison to the national average monthly household income of RM 6,141 (equivalent to USD 1,480) (Bloombergtv Malaysia, 2015), 35% (n = 42) of the participating families earned below the national monthly household income while 12.6% earned from RM5000 – RM7999 (equivalent to 1205USD – 1927USD), and 9.3% of the participating families earned above the national average monthly household income. Fifty one students did not report their family average monthly household income.

2. Overview of data collection

Data collection started at School 1 in the year 2014. Fifty students from Grade 11 were given consent forms to be taken home for their parents to sign. While all parents consented for their child to participate in the study, the author was only able to collect data from 13 participants from one class of 19 students (with six absent), before giving up the data collection due to a personal health condition.

After the recovery, the author resumed the data collection at School 2 and received consent from 106 parents for their child to participate in the study. All of them completed the weekly measures except for 7 students who left the school during that time. However, thirty participants failed to complete the pre-measures whereas 37 participants did not complete the post-measures due to their absence when these surveys were administered at school.

Due to the high amount of missing data, the analyses below included 13 participants from School 1 and 66 participants from School 2 who completed the pre-, post-, and weekly measures(see table 1). This final sample of 79 participants included 38 males and 41 females, among whom 56 were Chinese, 17 were Malays, 5 were Indians, and 4 were of mix ethnicities.

3. Procedure

Upon receiving confirmation from the ethnic review board in Malaysia, and institutional review board at the University of Hawai'i at Manoa, all the measures were translated to Malay and back-translated to English by the author and a psychology professor who are proficient in both English and Malay. The measures were first brought to two teachers at School 1 and both teachers had no problems understanding the questions in the measures. After that, the measures were pilot tested on a group of 10 students from the same grade level and they too had no problems understanding the measures.

Parents were contacted by the respective class teachers prior to data collection on the goals and procedures of the study, and were given consent forms. All the parents who returned consent forms agreed to participate. All the students in Form 4 (i.e., Grade 11) at both participating schools were briefed regarding the purpose and procedure of the study, and student assent forms were given to those who were interested in participating. All the students who attended the briefing session consented to participate. Participants were told during another school assembly that they could omit any uncomfortable questions and were

free to withdraw at any time during the data collection. They were also assured that their responses would be kept completely anonymous and confidential, as the participants were recognized eventually based on arbitrary identification numbers instead of their names.

4. Design

This study adopted a three-month microgenetic design (Lavelli, Pangoja, Hsu, Messinger, & Fogel, 2008). Unlike traditional longitudinal design in which observation is typically conducted before and after the change takes place, in a microgenetic design observations are conducted before, during, and after a short transitional period during which changes occur. Three types of measures were used in the current study: measures of *pre-assessments* administered in the beginning of the three month period (Time 1: T1); measures of *post-assessments* administered at the end of the three month period (Time 2: T2), and measures of *weekly assessments* that were completed by participants once a week for three consecutive months. The pre- and post-measures were in the forms of a booklet and administered during their "free and easy sessions" (i.e., usually a half an hour session for students to read or participate in pen and paper activities prepared by the school which are unrelated to academics) in their classrooms by trained research assistants, first in March, and then in June for School 1 in the year of 2014, while participants in School 2 were given the pre-measures in August, and then in November for the post-measures in the year of 2015 (see details below). Research assistants and the author were on hand if the participants had any questions, during the pre- and post- assessments for both schools.

Trained research assistants used *what's app* (a popular free-chat Smartphone application in Malaysia), to prompt participants to complete weekly measures using their smartphones. For School 1 who participated in 2014, Qualtrics (an online survey application) was used and the *what's app* survey link was emailed to participants every week. However, the collection of weekly assessment was not very successful using the online platform.

Therefore, paper-pencil tests were used instead in 2015 at School 2. The paper-pencil tests, which comprised of exactly the same questions as in the online Qualtrics surveys, was administered at the beginning of each week and collected at the beginning of the following week at school. Participants who had any questions could also contact the author or research assistants via *what's app* or email during the weekly assessments. Furthermore, based on the information gathered during the consent process regarding the availability of participants, personalized data collection schedules were created for research assistants to prompt the participants to complete the surveys during each week.

5. Measures of Pre- (T1) and Post-Assessments (T2)

Internet Experiences Questionnaire (IEQ) - Revised. Developed based on existing surveys of internet behaviour and bullying (e.g., Finkelhor et al., 2000; Kochenderfer & Ladd, 1996; Maxwell, 2001), Raskaukas and Stoltz (2007)'s 28-item Internet Experiences Questionnaire (IEQ) was adapted to examine experiences related to being bullied either at school (e.g., In the past month, how often have you been hit, pushed, or shoved) or on internet, including Facebook (e.g., In the past month, how often has someone sent you any nasty or harassing text messages). Participants were asked to first answer whether they had experienced any form of school bullying or cyberbullying in the past month and then indicated the frequency they had experienced each form of bullying on a 4-point scale (1 = Never, 4 = Many times). Because Raskaukas and Stoltz (2007)'s measure did not specifically focus on cyberbullying on Facebook, the questions related to cyberbullying on Facebook were developed for the current study (see Appendix 4). It should be noted that IEQ was not designed to differentiate public from private forms of cyberbullying. Both cyberbullying and school bullying subscales yielded satisfactory internal consistency, estimated using *Cronbach's alpha*: .73, and .79 respectively at T1, and .72, and .79 at T2. Experiences of cyberbullying were significantly related to experiences of school bullying: r = .53 (p =.00) at

T1 and r = .60 (p = .00) at T2. Only the data on mean levels of cyberbullying on Facebook at T1 and T2 were included in the current analyses.

In addition, a series of questions adapted from Ellison al. (2007) were added to the IEQ to measure frequency of Facebook use. Participants indicated whether they were Facebook members, and then answered questions related to their Facebook usage (e.g., "Facebook has become a part of my daily routine") on a 4-point scale (1 = strongly disagree, 4 = strongly agree) (see Appendix 4). The Facebook use measure has shown satisfactory reliability scores when it was pretested with about 40 secondary school students aged 13–17 from Singapore in Kwan and Skoric's (2013) study. Furthermore, a longitudinal study using the scale to investigate the relationship between intensity of Facebook use, measures of psychological well-being, and bridging social capital indicated satisfactory test-retest reliability across a period of one year with (r = 0.88) Steinfield et al., 2008). Among the self-identified Facebook users at T1 (n = 68, and T2 (n = 67), the *Cronbach's alphas* for the Facebook use related questions were .90 at T1 and .91 at T2. Correlation between the pre- and post- tests of Facebook use was .99 (p = .00).

Social Anxiety. The Social Anxiety Scale for Adolescents (SAS-A, LaGreca & Lopez,1998) is a 22-item scale measuring social anxiety in adolescents, and is rated on a five point scale ranging from (1) *not at all* to (5) *all the time.* The scale consists of three subscales which include Fear of Negative Evaluation (e.g., "I worry about doing something new in front of others"), Social Avoidance and Distress- new (e.g., "I only talk to people I know really well"), and Social Avoidance and Distress – general (e.g., "I get nervous when I talk to peers I don't really know well").

Various studies have found that this scale represents a valid and reliable measure of social anxiety for either clinical or community samples (Ginsburg, La Greca, and Silverman, 1997; La Greca and Lopez, 1998; Storch, Eisenberg, and Roberti, 2003). Internal

consistencies for all three subscales ranged from .75 to .94 for pre- and post- measures. The pre- and post-test correlations for the three subscales ranged from .86 to .92 (p= .00). Due to the high inter-subscale correlations, average scores of social anxiety were calculated across all the items and used in the analyses.

Depression. The Patient Health Questionnaire 9 (Kurt, Spitzer, Janet & Williams, 2001) is a 9-item instrument based on the DSM-IV criteria for a major depressive episode over the past two weeks. The PHQ-9 score can range from 0 to 27, since each of the 9 items can be scored from 0 (not at all) to 3 (nearly every day), and is used also as a severity measure (Kurt, Spitzer, Janet & Williams, 2001). This screening measure has been validated against diagnosis by mental health professionals, and other depression assessment tools in various populations (Eisenberg, Golberstein, Sarah, & Gollust, 2007).

The PHQ-9 has shown good internal consistency with α = .87 in the current study for pre-assessment, and .86 for post- assessment. The correlation between the pre- and post-assessment of PHQ-9, was .96 (p = .00).

Loneliness. The 20-item UCLA Loneliness Scale-Version 3 (Russel, Peplau, & Cutrona, 1980) was used to measure loneliness. Responses are rated on a four point scale from (1) *never* to (4) *always* with higher scores indicating higher degrees of loneliness (e.g., How often do you feel alone?).

Multiple studies have shown that the UCLA Loneliness Scale-Version 3 is reliable with internal consistency ranging from .84 to .94 and test-retest reliability of .73 over a one year period (Prinstein, Boergers, & Vernberg, 2001; Russel, 1996; Vassar & Crosby, 2008). In addition, convergent validity was found with the NYU Loneliness Scale with a correlation of .65 (Rubenstein & Shaver, 1982) and the Differential Loneliness Scale of .72 (Schmidt & Sermat,1983). While the UCLA Loneliness scale version 3 was negatively related to measures of health and well-being (Russel, 1996). Internal consistency for the current study

was satisfactory with α = .80 for pre-, and .82 for post- assessment. Furthermore, the correlations between pre- and post-assessment of loneliness was r = .51 (p = .00)

Self-Esteem. The Rosenberg Self-Esteem Scale (RSES; Rosenberg; 1965) was rated on a scale of *strongly agree* (1) to *strongly disagree* (4) to measure self-esteem. The scale has both positive and negative worded items such as "I take a positive attitude towards myself" and "At times, I think I am no good at all" (reverse coded).

The RSES is a widely used scale and has shown evidence of good construct validity and reliability across various nations (Schmitt & Allik, 2005). Internal consistency, estimated by *Cronbach's alpha* was .68 for the pre-assessment, and .63 for the post-assessment, while the correlation between pre- and post-assessment scores was .95 (p =.00).

Self–Blaming Attribution. The Attribution Questionnaire (Graham & Juvonene, 1998) is designed to measure subjective appraisals of hypothetical victimizing incidents with six subscales and a total of 32 statements that capture thoughts, behavioural reactions and feelings towards those incidents. The current study used one subscale, *characterological self-blame* (9 items; e.g., "'If I were a cooler kid, I wouldn't get picked on") that was rated on a 4-point scale (1 ="Definitely NOT," 4 = "Definitely YES"). Items were averaged such that higher scores indicating higher levels of characterological self-blame.

In Graham & Juvonen (1998) study, characterological self-blame was moderately correlated with a self-report measure of victimization (r = .26, p <.01), suggesting that the two instruments are measuring independent, albeit related, constructs, and was highly correlated with a measure of behavioral self-blame (r = 0.58, p < 0.01), providing some evidence of convergent validity. For the current study, *Cronbach's alphas* were .86 for both pre- and post- assessment. The correlation between pre- and post-assessment was .96 (p = .00).

*Friendship Quality***.** Participants were asked to complete the Friendship Quality Scale (FQS; Bukowski et al., 1994) which assesses perceived quality of children's close friendships. The measure consists of 23 items that ask participants to rate how true the statement is about their relationship with their best friend on a 5-point scale from "not true" to "really true". The four subscales of FQS are (a) *protection*; two items (e.g., My friend would stick up for me if another adolescent caused me trouble); (b) *companionship*, seven items (e.g., My friend and I spend all our time together); (c) *security*, five items (e.g., If my friend or I do something the other doesn't like, we can make up easily) and (d) *conflict*, five items (e.g., My friend and I argue a lot). Using exploratory factor analyses, some studies have found that conflict appeared to capture a distinct construct that differed from what was measured by the other three subscales (Demir & Uber, 2004). Thus, only items from the protection, security and companionship subscales were summed to calculate friendship quality total scores with higher scores signifying higher quality of friendship.

The FQS has been found to be an internally consistent measure: the coefficient alphas for the FQS total scores were .86 for and .87 for pre- and post-assessments. The pre- and post-test correlations ranged from r = .96 (p=.00) to r = .98 (p=.00) for the three subscales. Bukowski, Hoza and Boivin (1994) have shown evidence of validity of the FQS by comparing mutual to non-mutual friendships and between stable to non-stable friendships in the FQS scores. Previous studies have shown that mutual friendships were related to higher quality of companionships, help and support, closeness and lower level of conflicts, as measured by the FQS.

6. Measures – Weekly assessments

The weekly assessments measured frequency of cyberbullying on Facebook, and included questions regarding whether cyberbullying occurred in public or private form, whether the victim knew the identity of the cyberbully, whether friends offered online

support when cyberbullying occurred, and whether the victim blamed him or herself for the experience of cyberbullying.

The weekly measure included 18 items that tap weekly experience of cyberbullying on Facebook across a three-month period. These questions were developed based on existing measures such as Kwan and Skoric (2013), Cassidy et al. (2009), and Patchin and Hinduja (2010) with adjustment made to specifically focus on cyberbullying on Facebook (see Appendix 3). Every week across a three-month period, participants were prompted to respond to questions related to (1.) whether they were bullied on Facebook in the past week in either public (2 items; e.g., "Did you receive any nasty/insulting comments on Facebook over the past week?") or private form (two items, "Did you receive any harassing private message on Facebook over the past week?") on a 4-point scale (1 = Never, 4 = Many times); (2.) whether they were aware of the identity of the perpetrator (3 items; e.g., "Did you know the name(s) of the person(s) who posted nasty/insulting comments on Facebook over the past week about you)?") on a dichotomous scale (1 = Yes, 0 = No); (3.) whether they blamed themselves for the experiences of being bullied on Facebook (6 items; e.g., "You received nasty/insulting comments on Facebook over the past week because these kinds of things always happen to you but not to other adolescents") on a 4-point scale (1 = Not true, 4 = Really true); and (4.) whether their friends provided any support (6 items; e.g., "My friend(s) stood up for me when someone posted nasty/insulting comments about me on Facebook over the past week") on a 4-point scale (1 = Not true, 4 = Really true).

Internal consistency estimated using *Cronbach's alphas* across the three-month period ranged from .71 to .93 for public cyberbullying, from .85 to .93 for private cyberbullying, from .84 to .89 for familiarity to the bully, from .77 to .94 for self-blame, and from .87 to .93 for friend support.

G. Results

1. Preliminary Analyses

Data were entered into Statistical Package for the Social Sciences (SPSS) Version 21.0 for analyses. Each item's maximum and minimum values were examined to check for any data entry mistakes. Given the fact that out of 119 participants, only 79 participants completed the pre-, post- and weekly measures while there were some who completed pre- and weekly measures, while some did not complete the pre- and post- measures, and only weekly, and some post- and weekly measures but not the pre- for the balance of the 40 participants (please refer to Table 1 for summary of missing data). Therefore, we conducted listwise deletion of 40 participants as there were too many missing data to complete the analyses.

As for the remaining 79 participants, Little's MCAR tests (Hill, 1997) were conducted using the chi-square statistic to test whether the values were 'missing completely at random' (MCAR). If this assumption was met, it would be assumed that the missing data gave consistent and unbiased estimates of correlations and covariance (Hill, 1997, p. 42). Results showed that the pre-measure variables, and the weekly measure variables were missing completely at random while the post-measure variables were only missing at random. Maximum likelihood method was used to analyse data that was missing in MPlus. Data screening was conducted with regard to distribution of each variable and whether the data met assumptions of follow-up statistical analyses. Subsequent analyses such as hierarchical regression analyses was conducted using Robust Maximum Likelihood which analysed data even when there's missing data within it

As the cyberbullying variable for pre- and post-measures were highly skewed, the cyberbullying variable was adjusted prior to conducting further analyses. The skewness for pre-measures and post-measures of cyberbullying were 2.30 and 1.96 respectively. The

Yuan-Bentler corrected chi-square test statistics and the sandwich-type robust standard errors were conducted to correct the non-normality of the cyberbullying variable.

2. Overview of the analytic strategy

Once missing data was analyses, and non-normality was fixed for the cyberbullying variable, data was analysed in terms of its descriptive statistics to understand more about the participant's background and Facebook usage. Following that, correlational analyses was conducted using Spearman (rank-order) correlations to correct non-normality issues.

To explore the possibility of the forms of cyberbullying, confirmatory factor analyses was conducted on the cyberbullying items in the weekly measures. After that, hierarchical regression analyses was conducted to examine hypothesis 1 to 4 instead of growth curve modelling or linear mixed modelling which should be the case for micro-genetic designs. The reason hierarchical regression analyses was used for the current data was because of the interruption of data collection from school 1 to school 2 which resulted in a compilation of data over two different time points over a three month period in two different schools.

3. Descriptive statistics

Descriptive statistics including means, standard deviations, skewness, and range of all main variables are presented in Table 2 to 4 respectively. Compared to girls, boys were rated as more depressed, lonelier and had lower friendship quality on both pre- and post-measures. There were no significant differences found between boys and girls on the weekly measures.

To explore the prevalence of cyberbullying amongst Malaysian adolescence, the descriptive statistics (see Table 2 and 3) showed that about 60 % and 58.3% of Malaysian adolescents at T1 and T2 respectively, either agreed or strongly agreed that they were Facebook users. However, only 15% of Facebook users reported having been bullied during T1 while about 20% of the participant experienced cyberbullying at T2. The correlations

between Facebook usage and frequency of being bullied on Facebook were negative at T1: r (79) = -.27, $p < .01$, and nonsignificant at T2,

4. Correlations among pre-assessment variables

As seen in Table 5, pre-measure of school bullying was positively correlated with cyberbullying, r (79) = .33, $p < .01$, depression, r (79) = .24, $p < .05$, and perceived quality of friendship, r (79) = .23, $p < .05$. On the other hand, pre-measures of cyberbullying was negatively related to Facebook use, r (79) = -.27, $p < .01$ and perceived quality of friendship, r (79) = -.24, $p < .05$, but positively related to depression, r (79) = .29, $p < .01$. Depression was positively related to loneliness, r (79) = .23, $p < .05$, and social anxiety, r (79) = .26, $p < .05$, but negatively related to self-esteem, r (79) = .31, $p < .01$. Loneliness was negatively related to self-esteem, r (79) = -.48, $p < .01$, and perceived quality of friendship, r (79) = -.37, $p < .01$. Self-esteem was negatively related to social anxiety, r (79) = -.31, $p < .01$.

5. Correlations among post-assessment variables

As seen in Table 6, post-measure of school bullying was positively correlated with cyberbullying, r (79) = .56, $p < .01$, and self-esteem, r (79) = .23, $p < .05$. In the post measures, Facebook use was negatively related to social anxiety, r (79) = -.34, $p < .01$, but positively related to characterological self-blame, r (79) = .26, $p < .05$. Depression was positively related to social anxiety, r (79) = .24, $p < .05$. Loneliness was negatively related to perceived friendship quality, r (79) = -.24, $p < .05$.

6. Correlations among weekly assessment variables

Table 7 shows that weekly measures of private forms of Facebook bullying were positively related to public forms of Facebook bullying, r (79) = .52, $p < .01$, anonymity of cyberbullies, r (79) = .32, $p < .01$, and characterological self-blame, r (79) = .48, $p < .01$, while public forms of Facebook bullying were positively correlated with anonymity of

cyberbullies, r (79) = .31, p < .01, characterological self-blame, r (79) = .40, p < .01, and Facebook friend support, r (79) = .32, p < .01. Anonymity of cyberbullies was positively correlated with characterological self-blame, r (79) = .24, p < .05. Characterological self-blame was positively correlated with Facebook friend support, r (79) = .47, p < .01.

7. Correlations among weekly measures and pre-assessment variables

Private forms of weekly public bullying was correlate positively with depression, r (79) = .28, p < .05, and loneliness, r (79) = .27, p < .05, and negatively correlated to self-esteem, r (79) = -.25, p < .05. Weekly measures of public forms of cyberbullying was positively related to pre-measures of cyberbullying, r (79) = .36, p < .01, loneliness, r (79) = .22, p < .05, and negatively related to self-esteem, r (79) =-.25, p < .05 as well. Table 8 shows that weekly measures of characterological self-blame was positively related to pre-measures of cyberbullying, r (79) = .31, p < .01, while anonymity was also positively correlated with pre-measures of cyberbullying, r (79) = .24, p < .05, but negatively correlated to perceived friendship quality, r (79) = -.24, p < .05.

8. Correlations among weekly measures and post-assessment variables

Table 9 shows that weekly forms of private cyberbullying was positively related to characterological self-blame, r (79) = .23, p < .05, and negatively correlated to self-esteem, r (79) = -.28, p < .05. Weekly measures of public cyberbullying was also negatively related to self-esteem, r (79) = -.29, p < .05.

9. Factor analysis of private and public forms of weekly cyberbullying

Confirmatory factor analysis was conducted to examine whether private and public forms of cyberbullying can be differentiated based on weekly data. I chose to report model chi-square, the comparative fit index (CFI), root mean square error of approximation (RMSEA) and the standardized root mean square residual(SRMR) for a few reasons. First, these four fit indices have been widely used in the literature. Second, fit indices such as CFI

are less likely to be affected by sample size (Bryne, 1998). Finally, these indices represent a range of model fit measures that estimate comparative indices of fit (e.g., CFI), approximate discrepancy between the samples observed and hypothesized correlation matrices (e.g., SRMR) and employ parsimony adjustment(e.g., RMSEA) (Brown,2006; Kline,2004). A good model fit generally has CFI close to .95, SRMR less than .08 and RMSEA less than .06 (Hu & Bentler,1999; MacCallum et al., 1996; Schumacker & Lamox,2004). As shown in Figure 1, the two-factor model of weekly public and private cyberbullying showed good model fit with χ^2 = .74 (*df* = 1), CFI = 1.00, RMSEA = .00, and SRMR = .03, and fit the data better than a competing one-factor model that failed to differentiate public from private cyberbullying: χ^2 = 8.91 (*df* = 2), CFI = .82, RMSEA = .20, and SRMR = .07.

Unlike the weekly measure, the T1 and T2 measures of cyberbullying were not developed to distinguish private and public forms. For exploratory purpose, I conducted confirmatory factor analyses with T1 and T2 data respectively to examine whether public and private forms of cyberbullying can be differentiated using this pre- and post-measures of cyberbullying. The results for the two-factor models showed poor model fit: post-assessment: χ^2 = 36.74 (*df* = 8), CFI = .73, RMSEA = .21, and SRMR = .11, and pre-assessment: χ^2 = 26.59 (*df* = 8), CFI = .79, RMSEA = .17, and SRMR = .10. Thus, only weekly private and public forms of cyberbullying were differentiated and treated as separate predictors.

10. Hierarchical regression analyses

Hierarchical regression analysis was conducted to address the second to fifth hypotheses. Specifically, pre-assessment variables at T1 (cyberbullying, social anxiety, depression, loneliness, and self-esteem) were entered in the first step as control variables (i.e., "baseline" initial adjustment), whereas post-assessment adjustment variables at T2 were treated as criterion variables in respective regression models. The average weekly assessment variables of private and public forms of cyberbullying were entered in the second step as the

predictors. In addition, other weekly assessment variables, including anonymity of the cyberbully, self-blame, and online friend support were centered and treated as moderators and their interactions with weekly assessment variables of private and public forms of cyberbullying (also centered) were entered in the third step and examined in relation to T2 adjustment variables.

As gender, ethnicity, and socio-economic status were not related to any outcome variables for all regression models and to increase statistical power, these background variables were not included in the analyses. Unstandardized regression coefficients (*B*s), as well as *F* and R^2 values were reported in Tables 10 to 13.

Hypothesis 1: While both public and private cyberbullying were expected to be related to adjustment problems, compared to private cyberbullying, public cyberbullying on Facebook were expected to be more strongly associated with lower self-esteem, higher depression, higher loneliness and higher social anxiety.

The results of regression that involved the tests of main effects of two predictors: private and public forms of cyberbullying provided partial support for the first hypothesis. Specifically, as shown in Table 10, public forms of cyberbullying on Facebook were positively related to depression but negatively related to social anxiety, but were not related to loneliness or self-esteem. On the other hand, private forms of cyberbullying on Facebook were positively related to social anxiety, and were not related to any other adjustment variables.

Hypothesis 2: Cybervictims who blamed themselves more for being cyberbullied would fare worse than those who blamed themselves less.

To address Hypothesis 2, I conducted moderator analyses that involved interactions between private or public forms of cyberbullying and characterological self-blame,

respectively in the regression analyses (see Table 11). Inconsistent with Hypothesis 3, none of the interaction terms were significant.

Hypothesis 3: The experience of being bullied on Facebook was expected to be associated with higher levels of adjustment problems among adolescents who were more often bullied by anonymous cyberbullies.

To address Hypothesis 3, I conducted moderator analyses that involved the interactions between private or public forms of cyberbullying and anonymity of cyberbullies (see Table 12). The moderating effects of anonymity of cyberbullies were only found for public but not for private forms of cyberbullying. As shown in Table 12, there were three significant interactions but one was opposite to what was predicted in Hypothesis 4. Specifically, the relations between public cyberbullying and depression or social anxiety were stronger when the average anonymity ratings were higher (i.e., when cybervictims tended not know the identity of the perpetrator), whereas the positive relation between public cyberbullying and self-esteem was weaker when the average anonymity ratings were higher.

Figure 2 to 4 illustrate these three unexpected interactions based on simple slopes plotted at at -1 *SD* (low), 0 *SD* (medium), and +1 *SD* (high) of each moderator. As shown in Figure 2 and 3, the relations between public cyberbullying and social anxiety or depression were significant only when anonymity of cyberbullies was higher, but were not significant when anonymity of cyberbullies was medium or lower. In contrast, Figure 4 demonstrates the relationship between public cyberbullying and self-esteem was significant and positive when anonymity of cyberbullies was higher. The findings between public cyberbullying and self-esteem was not consistent with Hypothesis 4.

Hypothesis 4: Cybervictims with less Facebook friend support were expected to exhibited higher adjustment problems than those with more Facebook friend support.

Inconsistent with Hypothesis 4, friendship quality did not play a significant role in moderating the relation between cyberbullying on Facebook and psychosocial adjustment as no significant interactions were found.

H. Discussion

The current study investigated forms of cyberbullying in a non-western context, and examined (1.) prevalence of Facebook use and Facebook cyberbullying among Malaysian adolescents; (2.) how public and private forms of cyber-bullying were associated with psychosocial adjustment problems; and (3.) whether the relations between cyberbullying and adjustment problems were moderated by characterological self-blame, anonymity of cyberbullies, and online friend support. Although there were many studies being conducted on cyberbullying (e.g., Kowalski et al., 2012), few have investigated cyberbullying in non-Western contexts like Malaysia. The current study filled this gap by using a micro-genetic design which took into account initial "baseline" levels of cyberbullying and adjustment problems and focused on the effects of cyberbullying on adjustment problems within a three-month time span.

1. Prevalence of Facebook Use and Cyberbullying

Although more than half of the Malaysian adolescents frequently used Facebook, only a small percentage of them engaged in cyberbullying. The popularity of Facebook has shown a special increase in its use among youth in Malaysia, with 38% of 10 million users being 18 and 24-years-old (socialbakers.com, 2010). Following a study conducted in Malaysia on the adoption of Facebook usage amongst youth (n = 200, aged 15 to 25 years) through surveys, 67% of the respondents used Facebook to connect with friends or reconnect with old ones (Mustaffa et al., 2011). It shows that the use of Facebook enables friends to keep in touch and maintain friendship, and this is one way to stay connected.

Unexpectedly, frequent use of Facebook did not lead to high prevalence of cyberbullying, a positive news with regard to the emerging young Facebook users in this Southeast Asian country. Yet the present study focused on Facebook as the only platform for cyberbullying, but cyberbullying could happen on other social media platforms that were not investigated in the current study, such as Instagram. For example, a study conducted with 105 Malaysian adolescents from four different high schools in Perak through in-depth interviews examining the emergence of cyberbullying among adolescents, indicated that the majority of cyberbully victims experienced being cyberbullied on communication media such as mms and sms instead of other social media platforms such as Facebook, MySpace, and Twitter (Abu Bakar, 2015). Although most of the informants in Abu Bakar's study admitted that they could not be separated from their mobile phones, it's the features of online media that attract the informants to continue using it include the ease of use, fun, free and interactivity. Had other social media platforms been included, the prevalence of cyberbullying could be found to be higher among Malaysian adolescents.

Unfortunately, from a statistical point of view, the low frequency of cyberbullying found amongst the participant, as well as the truncated sample due to large missing data, likely constrained the rest of the findings which were built upon the premise of relatively more frequent Facebook bullying, and may be partly responsible for the large number of non-significant results found in the regression analyses. In addition, the restrained variance and a large number of conducted analyses may have raised Type I errors with regard to the significant results found in the current study. Therefore, although the following discussion attempted to interpret the findings based on existing theoretical models and prior studies of cyberbullying, it should be forewarned that some of the results may be consequences of statistical artifacts that need to be replicated in future studies.

2. Differentiating Private and Public Cyberbullying

The present study provided some support for the differentiation between public and private forms of cyberbullying, a distinction that had not been examined in prior studies. Specifically, the results of confirmatory factor analysis showed that that a two-factor model of weekly cyberbullying fit the data reasonably well and fit the data better than the competing one-factor model that failed to differentiate private and public cyberbullying. These results provide initial support for distinguishing public and private forms of cyberbullying amongst Malaysian teenagers.

In line yet not completely consistent with Hypothesis 1, the relations between weekly cyberbullying and various adjustment variables at the end of the three month period varied somewhat depending on the form of cyberbullying. For instance, public forms of cyberbullying were positively associated with depression and social anxiety. On the other hand, private forms of cyberbullying were negatively associated with social anxiety. These findings provide some preliminary evidence for the construct validity of these two forms of cyberbullying instead of treating cyberbullying as one single construct as previously assessed in other studies (Hinduja & Patchin, 2008).

The first hypothesis that public and private forms of cyberbullying had significant main effects on psychosocial adjustment was partly supported. As hypothesized, public, rather than private forms of cyberbullying on Facebook was positively related to depression suggesting that those who are publicly cyberbullied would experience relatively higher levels of internalizing problems. The results supported previous studies on cyberbullying and depression (e.g., Kowalski & Limber, 2013), and the prediction that those who were publicly cyberbullied fared worse than those who were privately cyberbullied. Returning to the explanation of the ‘bystander ‘effect, and how it plays a role online, especially when cyberbullying is made public, the participants who experience public forms of cyberbullying on Facebook were found to be more depressed possibly because of how quickly the comment

or post reaches a large audience of "cyber" bystanders. Additionally, the perception of an instant, and constant audience of peers is detrimental and the victims can't stop the comments or posts from happening (Runions et al., 2013). Therefore, the negative effects of "cyber-bystanders" may also play a part in how a cyber-victimized adolescent adjust especially when being publicly bullied on Facebook, and needs to be investigated further in future studies.

Similar to relational or indirect aggression, public forms of cyberbullying consists of spreading rumors, and lies, or hurling insults at the victim on a huge social network such as Facebook which increases the amount of people who see it, and at a faster rate (Kwan & Skoric,2013). When the victim realizes that many people has already seen it, it increases the chances of depression because the victims circle of friends, their relatives, along with the bullies friends will be able to see it. It gets worse when the post is shared out which means friends of friends can see it too. Based on these findings, it is clear that being publicly cyberbullied on Facebook is a risk factor, and a prompt response to any complaint or threat may actually help avoid a disaster in terms of the adjustment of the victim.

Unexpectedly, experiences of being cyber-bullied in public, i.e., status updates on the Facebook wall, were found to be negatively correlated with social anxiety. One explanation is that findings from these previous studies were measuring cyberbullying as a whole rather than in different forms, and on multiple social media platforms (e.g., Li,2005). This unexpected finding may be a consequence of a statistical phenomenon called suppressor effect. According to Conger (1974, pp. 36–37), a suppressor is "a variable which increases the predictive validity of another variable (or set of variables) by its inclusion in a regression equation," Thus, suppressor effect occurs when the entry of a third variable in the analyses changes the magnitude or even direction of the relation between an independent variable (IV) and a dependent variable (DV), often due to the high correlation between the third variable and the independent variable. In the current study, the relation between public cyberbullying

(i.e., the IV) was positively correlated, yet non-significantly, with social anxiety (i.e., the DV): r (79) = -.09, p > .05 (see Table 9), but this relation became negative and significant when private cyberbullying (i.e., the third variable), which was highly correlated with public cyberbullying, r (79) = .52, p < .01, was simultaneously examined in the regression analyses. To further explore this suppressor effect, I re-ran the regression analyses with only public cyberbullying as the predictor. The results showed that the relation between private cyberbullying and social anxiety was non-significant. Therefore, the decrease in social anxiety for those students who were publicly cyberbullied occurred because private forms of cyberbullying explained variability in public forms of cyberbullying; that is, for a victims who was publicly cyberbullied to experience a decrease in social anxiety required private forms of cyberbullying to be present as well.

On the other hand, private forms of cyber-victimization was associated with higher social anxiety. A reason for the opposing results could be that adolescents who lacked social skills, and had less friends in school could have transferred that same behaviour online. These results are consistent with the findings from Navarro and colleague's study (2012) examining 1127 Spanish students aged 10 to 12 on cyberbullying victimization, and it's association with social anxiety and social competence. Evidence from their study showed that specific symptoms of social anxiety, interpersonal difficulties to communicate with peers and close friends, and lack of appropriate social skills increases the chance of being cyber-victimized. Similarly, Malaysian students who experienced private forms of cyberbullying could potentially have lower social skills as weekly assessments of private-cyberbullying was positively correlated to pre-assessments of loneliness, r (79) = .27, p < .05. Given that private forms of cyberbullying relies on private communication between the perpetrator and victim, this would mean that Malaysian adolescents who had lower social skills in school felt the same when they were on Facebook. In addition, pre-assessments of cyberbullying was

negatively correlated to Facebook usage r (79) = -.27, $p < .01$ which could mean that those who had higher social skills used Facebook more often. In comparison, those who were not socially competent in school used Facebook less, and thus possibly experience cyber-victimization on Facebook privately which in turn increases their social anxiety.

In regards to the suppression effect, the relationship between private forms of cyberbullying on Facebook and social anxiety was examined once again. Likewise, the correlation between weekly public forms of cyberbullying and private forms of cyberbullying were high as previously indicated, but there was no relationship found between weekly private forms of cyberbullying and post measurement of social anxiety. Thus, a regression was re-ran, and results did not show a significant relationship between private forms of cyberbullying and social anxiety either. As a result, the increase in social anxiety for those students who were privately cyberbullied occurred because public forms of cyberbullying explained variability in private forms of cyberbullying. It is clear that for the relationship between both forms of cyberbullying on Facebook and social anxiety, both public and private forms of cyberbullying need to be present for the relationship to be significant. There was no suppression effect found on the relationship between public forms of cyberbullying on Facebook and depression, as the relationship was significant even when private forms of cyberbullying was taken out of the regression analyses.

3. The moderating role of characterological self-blame

The second hypothesis was not supported as an association between characterological self-blame as its interaction with private and public forms of cyberbullying on Facebook on psychosocial adjustment was not significant. Going back to the social information processing theory (SIP) above (e.g., Crick & Dodge, 1994), a child can attribute an event such as exam failure occurring as a result of external factors (e.g., the paper was difficult") or as a result of an internal self-referent attribute (e.g., "I was not smart enough"). A possible reason could be

that many adolescents may be projecting a different self on Facebook, i.e., an imagined version of themselves (Joinson, 2003). Given that the measurement of characterological self-blame relies on the adolescent blaming themselves for being bullied, they may be answering the statements based on the person they would like to portray online, i.e., online persona, rather than as themselves. Furthermore, a few motivating factors for the use of the internet are self-enhancement, self-protection and self-esteem (Joinson, 2003), and these three factors are related to how a person perceives themselves on how they interact online which may be different than in person. Therefore, it may be that many Malaysian adolescents portray a different version of themselves online resulting in a protective factor (e.g., not blaming themselves for being cyberbullied) for these adolescents.

Besides portraying a different version of themselves which resulted in them not attributing blame for being cyberbullied, another reason could be that the landscape of Facebook may spur cyber-victims to attribute blame to external factors as there's lack of face to face interactions. Recent findings from an investigation with 100 students who were cyberbullied, and given 5 bullying blogs to read from found that the students most often attributed blame to bullies, and that the bloggers often attributed bullying as uncontrollable (Danielson & Emmer-sommers, 2016). Perhaps victims who were cyberbullied on Facebook, and didn't post or share anything may attribute it to external factors because they knew they weren't the ones who started it which reduces the tendency to self-blame and attribute it to other factors instead. Furthermore, traditional bullies who were historically powerful because of their popularity or size, may be less powerful or have less advantage on-line because those traits do not matter on the internet. Understanding the equalizing characteristics of the Internet may allow the victim to attribute it to other factors such as the bully is bored, or they are doing this to entertain themselves. Given that the current study did not examine attribution of blame to external factors, no conclusive findings can be made as to the lack of

relationship between characterological self-blame as a moderator between cyberbullying and psychosocial outcomes. To overcome the shortfall from this study, prospective studies should include the measurement for both characterological self-blame and behavioural self-blame, along with assessment for locus of control to investigate whether the attribution of blame could moderate the relationship between cyberbullying and psychosocial adjustment.

4. The moderating role of anonymity of cyberbullies

The present findings provided some support for the moderating roles of anonymity of cyberbullies but in somewhat opposite directions to what were expected in Hypothesis 3 especially for the relationship with self-esteem. A common characteristic that has been cited in many studies of cyberbullying (e.g., Patchin & Hinduja, 2010, Li, 2005), is that cyberbullies can remain ‘‘virtually’’ anonymous on Facebook through the use of personalized profiles that includes general information such as educational background, school, name, age, birthday, etc. on Facebook. Despite this, research have shown that most victims know (or at least think they know) who is bullying them and that it is often someone from within their social circle (Hinduja, 2009, Juvonen & Gross, 2008). Knowing that, the current study investigated the role of anonymity in the relation between cyberbullying on Facebook and how it affected psychosocial adjustment outcome. In this study, results suggested that the relationship between public forms of cyberbullying with depression, and social anxiety was stronger when they knew the identity of the victim (see Figure 2 and 3). However, public forms of cyberbullying was related to higher self-esteem when anonymity of the perpetrator was high.

Given that Facebook is a platform for students to post messages on friends’ pages, post and tag pictures and videos, and also have private conversations with their friends, it is a landscape where interaction can be seen publicly when it’s posted on another friends’ page, or privately when it’s sent through Facebook messenger (Zywica & Danowski, 2008).

Understandably, public forms of cyberbullying is similar to traditional forms of bullying such as being beaten up in front of others as everyone on your network and the bullies network can see it. In traditional bullying, individuals who are bystanders are present more than 80% of bullying situations (O'Connell et al., 1999), but on Facebook, if a person is cyberbullied publicly, there will be constant bystanders as everyone can see it every time they log onto Facebook. In the case of Facebook, a person can be a silent bystander by simply viewing the post and forgetting about it or are reinforcers by sharing, or liking the post which will provide the perpetrator the power that they seek (Salmivalli et al.,1996). Consequently, defending the victim may make bullying an unsuccessful strategy for attaining and demonstrating high status (Karna et al.,2011), and in the case of Facebook, the defenders are those who stands up for the victim by commenting on the post status in defense of the victim.

Studies have shown that victims in classrooms where there are high levels of reinforcement for bullying behavior and low levels of defence for the victims tend to develop social anxiety and are often rejected by peers (Karna et al., 2008). A person who is cyberbullied publicly on Facebook can be protected by the other 'bystanders' who are on Facebook at that time, or they can make a complaint to Facebook to ban the user or remove their posts. Once the perpetrator is admonished for his or her wrongdoing, and especially if people know who they are, they would stop harassing the victim. Consequently, the victim would be validated positively reducing the possibility of depression knowing that there are people helping and supporting them, and that they can actually do something about it instead of feeling helpless. More research on the roles of cyber-bystanders and how it impacts the victims is needed to fully understand how it related to adjustment.

In figure 3, the relationship between public cyberbullying and social anxiety grew stronger as anonymity increased. This means that cyber-victims who are not sure or don't know the identity of the perpetrator will have higher social anxiety. Referring back to the

cyberball paradigm experiment(William & Jarvis,2006), being ostracized by anonymous individuals had harmful effects on the participants which is similar to adolescents who are being cyberbullied. The cyberball paradigm experiment itself shows that it doesn't take a person you know to hurt you through social exclusion, but even individuals who you've not seen, and are not able to see can also hurt a person just by excluding them from a game. In terms of cyberbullying, an adolescent who's been cyber-victimized constantly on Facebook by an unknown perpetrator will have increase fear of the people around them, even who they add as a friend on Facebook, which in turn increases their social anxiety. Therefore, knowing the identity of the perpetrator allows the victim to act on it, by reporting the perpetrator to the relevant authorities and Facebook.

In the case of the moderating effect of anonymity on public cyberbullying and self-esteem, figure four shows that self-esteem actually increased slightly for victims who did not know the perpetrator (e.g., high anonymity), compared to when there was moderate to or low anonymity which lead to lower self-esteem. It could be that ICT prowess and anonymity is an equivalent in terms of power imbalance when it comes to cyberbullying as many people think of a bully in the traditional sense as possessing certain physical traits, i.e., strength or qualities that an individual either has or does not have (Vandebosch & Van Cleemput, 2008). However, cyberbullying requires no such personal traits and can be manifested simply through the outward expression of hate which gives confidence to a cyberbully victim to react back towards the bully. Based on a qualitative study conducted by Vandebosch and Cleemput (2008) on 53 focus groups of students ranging from 10 to 18 year olds, students cited "true" cyberbullying as intention to hurt (by the perpetrator) and perceived as hurtful (by the victim); be part of a repetitive pattern of negative offline or online actions; and be performed in a relationship characterized by a power imbalance (based on "real-life" power criteria, such as physical strength or age, and/or on ICT-related criteria such as technological know-

how and anonymity). Clearly, not knowing the person behind the cyber-attacks increases the feeling of powerlessness and frustration. However, studies have shown that most traditional bullies also participate in cyber-bullying (e.g., Slonje & Smith,2008, Li,2007). These studies suggests that cyber-victims cannot break away from bullying especially if it's the same bully because the victim might be afraid to retaliate online, knowing that that the bully may physically or verbally hurt them in school the next day. Therefore, not knowing the identity of the perpetrator on Facebook could possibly give more confidence to the victim to personally message the bully to stop, or report the abuse which could lead Facebook to ban the perpetrator. Being able to take action towards an unknown bully with no repercussions in school reduces the feeling of powerlessness for the cyber-victim, and could potentially lead to higher self-esteem.

Another important point to note is that the unusual findings in regards to the moderating effects of anonymity could be due to Type I errors as explained earlier. A 'False-positive' could have occurred as there were low occurrences of participants being victims of cyberbullies in an already small sample size. Due to the small sample size, it is likely that a statistical significance was detected which was possibly the case in the present study. Any differences or changes in psychosocial adjustment with the sample that had experience cyberbullying would then result in a statistical significance. One way to reduce the error is to set the significance lever lower with the *p*-value at .01 instead of .05. If the p-value was .01, the results for the moderating effect of anonymity for public cyberbullying on self-esteem would not be statistically significant. As a consequence, it is important that the moderating role of anonymity be tested further in future studies to examine the validity of the current results.

5. The moderating role of friendship quality of the cyber-victims

The results are inconsistent with the final hypothesis which predicts that the quality of friendship will moderate the relationship between the experience of being cyberbullying and psychosocial adjustment. Although friendship experiences of children and adolescents have consistently been shown to be related to psychosocial adjustment such as self-esteem, loneliness, and depressed mood (Bukowski,Hoza, & Boivin, 1993; Parker & Asher, 1993), the results did not show any relationship possibly because previous studies measured friendship quality as a buffer for traditional bullying instead of cyberbullying. Although good peer relationships work as a buffer for traditional bullying, the associations were clearly not the same for cyberbullying. These findings are similar to a recent study conducted by Aoyama, Saxon and Fearon(2011), where they conducted a study examining 463 middle and high school students in Texas through an online survey measuring the frequency of cyberbullying victimization, the level of self‐esteem, depression, anxiety, stress, and the friendship quality. Their results also showed that quality of friendship quality did not seem to moderate negative psychological effects of cyberbullying. Thus, results from the current study supported Aoyoma, Saxon and Fearon(2011) findings that friendship quality could not moderate the effects of cyber-victimization and psychosocial outcomes even on Facebook indicating the complexity of handling cyber-bullying compared to traditional bullying.

Another reason that friendship quality did not moderate the relationship between private and public forms of cyberbullying and psychosocial adjustment could be that the friends they are close to in school is different from the friends they interact with online. In addition, Facebook has been found to extend one's social network, and to re-connect with old friends (Ellison et al.,2007) which means that there could be less overlap between friends in the offline and online world. As Facebook interface is constantly changing, it has evolved to become not only an interactive platform but dynamic channels of news and information (Mustaffa et al.,2011). A person can both be a content consumer and a content producer on

Facebook which allows them to interact with people from their own social network and around the world. The measurement used in the present study assessed friendship quality with their close friends in school, i.e., If my friend or I do something the other doesn't like, we can make up easily, rather than online or Facebook which may have affected the results of the study. As a person can have a wider social network on Facebook, their interaction with their online friends may differ as well because they may simply be content consumers which does not require much interaction. Therefore, future studies would need to assess online friendship quality with their friends they interact with frequently when they are on Facebook, and the way they interact with them rather than their offline friendship quality.

Taken together, both public and private forms of cyberbullying are differentially related to psychosocial adjustment, public and private forms of cyberbullying, and anonymity which played a role in affecting adolescent's psychosocial adjustment in the current study. Evidence from the current study linked public forms of cyberbullying to higher depression and lower social anxiety while private forms of cyberbullying was associated with higher social anxiety. On the other hand, characterological self-blame and friendship quality did not have an effect on psychosocial adjustment for both private and public forms of cyberbullying. Annonymity is an important factor in the relationship between public forms of cyberbullying and psychosocial adjustment. Public forms of cyberbullying was associated with lower depression and social anxiety, and higher self-esteem when the victims know the identity of the perpetrator. Based on the results, it is clear that private and public forms of cyberbullying had different effects on psychosocial adjustment, even when moderated by anonymity.

6. Limitations

The current study has some limitations. First, the sample size is small for the amount of analyses conducted. The present study had more than 6 predictor variables and above especially for the second hypothesis onwards, and a good sample size would be at least 120

participants but this study only had 79(Kelley & Maxwell,2003). Future studies should replicate the current study with a larger sample size to validate the results, and to take note of point of time during collection to avoid the same mistake that the present study made. Validation is needed to corroborate that the existing findings are not only limited to adolescents in Malaysia, but other countries as well in Asia. It is important that the current study is replicated in different countries in Asia as cyberbullying and its effects may differ in those countries even if they are a collectivist culture. For instance, China's strongest social media platform is Wechat, while Korea's strongest social media and communication platform is Kao Kao Talk, and this alone can affect the outcomes of the study.

Another limitation is the attrition rate of the participants. Although there was a 100 percent consent rate by parents and students, the participants started falling off after the third to the fourth week. Every week, the participants were messaged via what's app from the first school to complete their weekly surveys but they slowly did not respond on their phones, or online. One of the reasons could be the same measure that they had to answer every week resulting with the participants being bored to answer the same questions repeatedly. Another reason could be that there were school holidays in between the weeks they were taking the weekly assessments. Other research on cyberbullying in the future can utilize a more engaging approach for the participants such as having imagery, and videos to draw their attention every week instead of statements that they need to answer which is stagnant. Adolescents nowadays are drawn to moving scenarios, and bright images even on social media, and future studies need to understand the changing behavioural landscape of adolescents and design assessments based on adolescents usage online (Zywica & Danowski,2008).

Other limitations include the assessments used for the current study. As mentioned, some moderators may actually have played a significant role such as friendship quality but

didn't show in the current study because the pre- and post- assessments used were mainly for face-to-face friends instead of online. The correlations for friendship quality and characterological self-blame which was adapted for the weekly measures showed strong correlations to the other variables, and needs to be duplicated and validated for future studies. Moreover, the measurement used for certain adjustment variables such as depression many not have been appropriate for the current sample, and hence affected the findings. For instance, depression has been shown to be more prevalent amongst girls, i.e., Nolen-Hoeksema & Girgus (1994), but it wasn't the case with the current sample with boys being more depressed in both the pre- and post-test. It is then important to re-assess the measures by validating the results with more focus groups, or in other studies.

Additional limitations include the fact that the study was only conducted on one platform and not multiple ones. While there are 10 million Facebook users in Malaysia by 2010, there are other sites that have developed since then with the introduction of instagram, pinterest, and snapchat. It is then important for forthcoming studies to assess the measures used for cyberbullying in this study on other social media platforms as well. Finally, there could have been a problem with the cyberbullying assessments for pre- and post- measures as confirmatory factor analyses was conducted and the model did not fit well unlike the weekly measures. It would be wise to have used the same items for the pre-, post- and weekly measures to ensure that the items are reliable and valid.

7. Future directions

Despite the limitations, the current study has several strengths. First, the results from this present study contribute to the growing body of research on cyberbullying in adolescents. Current findings in Malaysia suggests that cyberbullying exists in a non-western context such as well. Moreover, it is multidimensional as the two forms of cyberbullying on Facebook were differentially related to psychosocial adjustment and there are multiple factors

contributing to the effects of private and public forms of cyberbullying. Second, the current study filled in gaps in the previous literature (e.g., Huang & Chou,2010, Slonje & Smith,2008), and is one of the first studies to employ a micro-genetic design. Having a pre-, post- and weekly assessments allows the researcher to study deeper the relations between private and public forms of Facebook on psychosocial adjustment. Causality could have been inferred in a true micro-genetic design, but it couldn't in the case of the current study due to data collection interruption.

Another contribution from the present study would be the development of an assessment for cyberbullying. Although it was adapted from previous measures (e.g., Raskaukas &Stoltz, 2007, Ellison et al.,2007), the measure developed does not address cyberbullying as a single entity, but rather on Facebook which allows the findings of a multidimensional type of bullying online. The items used in this study can be replicated on other platforms as well to further expand the understanding of cyberbullying. Perhaps, other forms of cyberbullying can be discovered. In addition, other studies should also utilize different forms of measurements using these items besides self-reports such as teacher or parent report, offline, and online friend report. In-depth interviews can also be considered to further add validity to the measures developed. In the Malaysian context, an important point to take into account is the possibility of differing languages used especially on Facebook. A study conducted amongst Malaysian university students investigating the occurrences of code-mixing insertion of English morphemes into Malay lexical items suggested that the most dominant reason for language alternation among the students is to amplify and emphasize a point (Bukhari, Kaizin, Anuar, & Abdul). Therefore, future studies conducted in Malaysia investigating cyberbullying should take into account the switching of languages between the three main ethnicities, and how it differs if the perpetrator and the victim are both from different ethnic groups. Ideally, the participants could add the researcher as their

friend on Facebook for the researcher to track Facebook postings, and communication over a three month period.

Finally, results from this study have some important implications for the development and implementation of intervention programs in the region of Southeast Asia. For instance, intervention programs to create awareness amongst parents and teachers on the problems associated with cyberbullying especially on the most used social media platform,i.e., Facebook in Malaysia can be implemented across high schools in Malaysia. These types of interventions are able to teach parents and teachers on identifying the form of cyberbullying that is experienced by the victim, and to assist the victims on how to address it. In addition, knowing that the identification of the perpetrator played an important role in psychosocial adjustment for victims, the intervention programs can encompass ways to educate friends of victims on how to identify the perpetrator, and to report them to relevant authorities such as Facebook itself.

Overall, the present study partly provided support for two of the hypothesis, while no support was found for the other two. One of the main reasons that there was a lack of significant findings was due to the type of statistical analyses used. As the current study was originally supposed to be a micro-genetic design, the appropriate statistical analyses would be to conduct linear mixed modelling or growth curve modelling. However, because of the interruption of data collection because of the author's health, hierarchical regression analyses had to be used. Due to the high correlations between the pre-test (criterion variable) for the adjustment variables, and the post-test(predictor variable) for the adjustment variables, the results could have been confounded causing non-significant findings. An ideal study for the future would be to use a micro-genetic design, and gain access to the participants profiles to capture snapshots of postings across three months, and for it to be conducted across a few heavily used social media platforms.

Table 1

Summary of Missing data

	Number of Participants Who Completed Pre-, Post-, and Weekly Measures			
	Weekly measures only	Pre- and weekly measures	Post- and weekly measures	Pre-, post-, and weekly measures
School 1	0	0	0	13
School 2	99	76	69	66
Total	99	76	69	79

Table 2

Mean, standard deviation, skewness, and range for all variables in the pre-measure

Variables	Boys				Girls				
	M	*SD*	*Skewness*	*Range*	*M*	*SD*	*Skewness*	*Range*	*F* test
Pre- Frequency of Facebook use	2.22	.92	.54	3.00	2.32	.87	.17	3.00	.26
Pre- School Bullying	1.62	.59	.87	2.00	1.71	.82	.88	2.50	.35
Pre- Cyberbullying	1.30	.47	1.77	2.00	1.22	.37	3.19	2.00	.84
Pre- Characterological self-blame	1.56	.52	.24	1.67	1.63	.68	-.51	2.33	.59
Pre- Friend Quality	3.35	.95	-.72	4.00	3.75	.75	-.63	4.00	4.26*
Pre- Loneliness	2.07	.53	.35	2.25	2.30	.34	-.39	1.35	5.21*
Pre- Depression	.89	.61	1.34	2.33	1.22	.78	.12	2.67	4.28*
Pre- Social Anxiety	3.00	.87	.26	3.21	2.93	.94	.67	4.26	1.00
Pre- Self Esteem	2.27	.34	-.21	1.10	2.37	.49	-.85	2.50	1.25

Note. Pre- refers to measures administered at the beginning of the three-month period.

Table 3

Mean, standard deviation, skewness, and range for all variables in the post-measure

Variables	Boys				Girls				*F* test
	M	*SD*	*Skewness*	*Range*	*M*	*SD*	*Skewness*	*Range*	
Post- Frequency of Facebook use	2.42	1.00	.34	3.00	2.29	.87	.36	3.00	.55
Post- School Bullying	1.71	.65	.81	2.25	1.67	.80	1.01	2.50	.78
Post- Cyberbullying	1.29	.37	1.01	1.17	1.25	.38	2.89	2.25	.64
Post- Social Anxiety	3.96	1.34	.48	5.67	4.26	1.53	.58	6.67	.89
Post- Friendship Quality	3.37	.89	-.85	3.80	3.73	.75	-.59	2.87	.05*
Post- Loneliness	2.00	.60	.14	2.00	2.34	.46	-.36	1.75	8.09**
Post- Depression	.76	.54	1.23	2.22	1.27	.83	.08	2.67	10.06**
Post- Characterological self-blame	1.53	.55	.55	1.67	1.69	.66	.58	2.33	1.40
Post- Self Esteem	2.18	.46	-.47	1.70	2.34	.42	-.76	1.90	2.63

Table 4

Mean, standard deviation, skewness, and range for all variables in the weekly measure

Variables	Boys				Girls				*F* test
	M	*SD*	*Skewness*	*Range*	*M*	*SD*	*Skewness*	*Range*	
Private Facebook bullying	1.31	.61	1.96	2.00	1.28	.47	1.92	2.00	.07
Public Facebook Bullying	1.20	.41	2.20	1.58	1.17	.23	1.26	.75	.15
Self-blame	1.29	.31	1.34	1.28	1.23	.26	1.24	1.06	.66
Anonymity of cyberbullies	.25	.31	1.18	1.00	.20	.27	1.54	.89	.42
Friendship quality	1.58	.57	.57	1.89	1.62	.59	.80	2.28	.09

Table 5

Correlational tables for pre-measure variables

	1	2	3	4	5	6	7	8	9
1.Pre- school bullying	1	.33**	-.10	.20	.24*	.12	-.18	.02	.23*
2. Pre- Cyberbullying	.33**	1	-.28*	.16	.29**	.09	-/16	-.13	-.24*
3. Pre-Facebook Use	-.10	-.28*	1	.07	-.17	.15	-.00	.08	-.05
4. Pre Characterological self-blame	.20	.16	.07	1	.12	.06	.07	.02	.09
5. Pre-depression	.24*	.29**	-.17	.12	1	.23*	-.31**	.26*	.03
6. Pre-loneliness	.12	.09	.15	.06	.23*	1	-.48**	.15	-.37**
7. Pre- self esteem	-.18	-.16	-.00	.07	.31**	-.48**	1	-.31**	.12
8. Pre-Social Anxiety	.02	-.13	.08	.02	.26*	.15	-.31**	1	.12
9. Pre-Friendship quality	.23*	-.24*	-.05	.07	.03	-.37**	.12	.12	1

**p<.05. **<.01*

Table 6

Correlational tables for post-measure variables

	1	2	3	4	5	6	7	8	9
1.Post- school bullying	1	.55**	-.17	.05	.04	.10	-.20	.12	.13
2.Post- Cyberbullying	.55**	1	.00	.18	.08	-.07	-.21	.01	-.02
3. Post-Facebook Use	-.17	.00	1	.26*	-.18	-.05	-.10	-.31**	-.15
4.Post Characterological self-blame	.05	.18	.26*	1	.02	.03	-.18	.07	.12
5.Post-depression	.04	.08	-.18	.02	1	.18	.02	.24*	.08
6.Post-loneliness	.10	-.07	-.05	.03	.18	1	-.03	.04	-.24*
7.Post- self esteem	-.20	-.21	-.10	-.18	.02	-.03	1	-.02	.04
8.Post-Social Anxiety	.12	.01	-.31**	.07	.24*	.04	-.02	1	.18
9.Post-Friendship quality	.13	-.02	-.15	.12	.08	-.24*	.04	.18	1

**p<.05. **<.01*

Table 7

Correlational table for weekly measure variables

	1	2	3	4	5
Private forms of Facebook bullying	1	.52**	.48**	.32**	.22
Public foms of Facebook bullying	.52**	1	.40**	.31**	.32**
Characterological self-blame	.48**	.40**	1	.24*	.47**
Annonymity of cyberbully	.32**	.31**	.24*	1	.19
Facebook Friend support	.22	.32**	.47**	.19	1

**p<.05. **<.0*

Table 8

Correlational table for weekly measure variables and pre-measure variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Weekly Private	1	.62**	.52**	.51**	.37**	.18	.20	.21	-.08	.28*	.27*	-.25*	.19	-.09
2.Weekly Public	.62**	1	.43**	.47**	.39**	.14	.36**	.13	-.16	.14	.22*	-.25*	-.03	-.07
3. Weekly Attribution	.52**	.43**	1	.41**	.57**	.15	.31**	.05	-.11	.18	.08	-.22	.16	-.12
4.Weekly Annoonymity	.51*	.47**	.41**	1	.35**	.07	.24*	.17	-.08	.09	.13	-.21	-.08	-.23*
5.Weekly Friendship quality	.37**	.39**	.57**	.35**	1	.12	.20	.00	-.12	.22	-.06	-.08	.10	.09
6.Pre-School bullying	.18	.14	.15	.07	.12	1	.33**	.20	-.10	.24*	.12	-.18	.02	.23*
7.Pre-Cyberbullying	.20	.36**	.31**	.24*	.20	.33**	1	.16	-.28*	.29**	.09	-.16	-.13	-.24*
8.Pre Characterological self-blame	.21	.13	.05	.17	.00	.20	.16	1	.07	.12	.06	.07	.02	.07
9.Pre Facebook Use	-.08	-.16	-.11	-.08	-.12	-.10	-28*	-.07	1	-.17	.15	-.00	.08	-.05
10. Pre-Depression	.28*	.14	.18	.09	.22	.24*	.29**	.12	-.17	1	.23*	-.31**	.26*	.03
11. Pre-Loneliness	.27*	.23*	.07	.13	-.06	.12	.09	.06	.15	.23*	1	-.48**	.15	-.37**
12. Pre-Self Esteem	-.25*	-.25	-.22	-.21	-.07	-.18	-.16	.07	-.00	-.31**	-48**	1	-.31**	.12
13. Pre-Social Anxiety	.19	-.03	.16	-.08	.10	.02	-.13	.02	.08	.26*	.15	-.31**	1	.12
14. Pre-Friendship quality	-.07	-.07	-.12	-.23*	.09	.23*	-.24*	.07	-.05	.03	-.37**	.12	.12	1

Table 9.

Correlational table for weekly measures and post-measure variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Weekly Private	1	.62**	.52**	.51**	.37**	.12	.21	-.03	.23*	.17	.13	-.29	.21	-.04
2.Weekly Public	.62**	1	.43**	.47**	.39**	.05	.12	.09	.14	.13	.22	-.29*	-.09	-.05
3. Weekly Attribution	.52**	.43**	1	.41**	.57**	.17	.22	.05	.08	.07	-.10	-.23	.12	-.12
4.Weekly Annoonymity	.51**	.47**	.41**	1	.35**	.20	.21	.07	.11	.03	.09	-.14	-.07	-.21
5.Weekly Friendship quality	.37**	.39**	.57**	.35**	1	.18	.10	.05	-.03	.08	-.11	-.02	.20	.11
6.Post-School bullying	.12	.05	.17	.20	.18	1	55**	-.17	.05	.04	.10	-.27*	.12	.13
7.Post-Cyberbullying	.21	.12	.22	.21	.10	.55**	1	.00	.18	.08	-.07	-.19	.01	-.02
8.Post Characterological self-blame	-.03	.09	.05	.07	.05	-.17	.00	1	.26*	-.18	-.05	.14	-.31**	-.15
9.Post Facebook Use	.23*	.14	.08	.11	-.03	.05	.18	.26*	1	.02	.03	-.01	.07	.12
10. Post-Depression	.17	.13	.07	.03	.08	.04	.08	-.18	.02	1	.18	-.18	.24*	.08
11. Post-Loneliness	.13	.22	-.10	.09	-.11	.10	-.07	-.05	.03	.18	1	-.40**	.04	-.24*
12. Post-Self Esteem	-.29*	-.29*	-.23	-.14	-.02	-.27*	-.19	.14	-.01	-.18	-.40**	1	-.28*	.06
13. Post-Social Anxiety	.21	.09	.12	-.07	.02	.12	.01	-.31**	.07	.24*	.04	-.28*	1	.18
14. Post-Friendship quality	-.04	-.40	-.12	-.21	.11	.13	-.02	-.15	.12	.08	-.24*	.06	.18	1

*p<.05. **<.0

Table 10

The main effects of public and private cyberbullying on adjustment of cybervictims

Criterion variable	Predictor	*B*	F	$R^2(\Delta R^2)$
Post-Depression				
Step 1	Pre-Cyberbullying	.23*	6.04**	40.2**
	Pre-Depression	.16**		
	Pre-Loneliness	.17		
	Pre-Self-Esteem	.33		
	Pre-Social Anxiety	.07		
Step 2	Weekly Private Cyberbullying	.15	5.20**	44.5**(4.3**)
	Weekly Public Cyberbullying	.31*		
Post-Loneliness				
Step 1	Pre-Cyberbullying	.11	9.24**	50.7**
	Pre-Depression	.09		
	Pre-Loneliness	.13**		
	Pre-Self-Esteem	.16*		
	Pre-Social Anxiety	.06*		
Step 2	Weekly Public Cyberbullying	.07	6.73**	50.9**(.02**)
	Weekly Private Cyberbullying	.15		

Post-Self-Esteem				
Step 1	Pre-Cyberbullying	.03	96.18**	91.8
	Pre-Depression	.03		
	Pre-Loneliness	.06		
	Pre-Self-Esteem	.04**		
	Pre-Social Anxiety	.03		
Step 2	Weekly Public Cyberbullying	.02	69.69**	91.9**(.01**)
	Weekly Private Cyberbullying	.04		
Post-Social Anxiety				
Step 1	Pre-Cyberbullying	.05	18.31**	.67**
	Pre-Depression	.07*		
	Pre-Loneliness	.10		
	Pre-Self-Esteem	.08		
	Pre-Social Anxiety	.07**		
Step 2	Weekly Public Cyberbullying	-.08*	15.15**	.70(.03**)
	Weekly Private Cyberbullying	.08*		

Table 11

The interactions between public or private cyberbullying and self-blaming attribution of cyberbullies

Criterion variable	Predictor	*B*	F	$R^2(\Delta R^2)$
Post-Depression				
Step 1	Pre-Cyberbullying	-.13**	6.04**	.40
	Pre-Depression	.17**		
	Pre-Loneliness	.11		
	Pre-Self-Esteem	.19		
	Pre-Social Anxiety	-.08*		
Step 2	Weekly Public Cyberbullying	.15	5.20**	.45**(.03**)
	Weekly Private Cyberbullying	-.11		
Step 3	Weekly Public Cyberbulllying x Attribution	-.08	4.19**	.46**(.06**)
	Weekly Private Cyberbulllying x Attribution	-.13		
Post-Loneliness				
Step 1	Pre-Cyberbullying	-.08	9.24**	50.7**
	Pre-Depression	.12		
	Pre-Loneliness	.13**		

	Pre-Self-Esteem	-.12*		
	Pre-Social Anxiety	-.10*		
Step 2	Weekly Public Cyberbullying	.09	6.73**	50.9**(.02**)
Step 3	Weekly Private Cyberbullying	.07	5.22**	51.1(.04**)
	Weekly Public Cyberbulllying x Attribution	.08		
	Weekly Private Cyberbulllying x Attribution	-.06		
Post-Self Esteem				
Step 1	Pre-Cyberbullying	-.03	96.18**	91.9**
	Pre-Depression	.03		
	Pre-Loneliness	.05		
	Pre-Self-Esteem	.04**		
	Pre-Social Anxiety	.02		
Step 2	Weekly Public Cyberbullying	-.03	69.69**	91.9**
	Weekly Private Cyberbullying	-.02		
Step 3	Weekly Public Cyberbulllying x Attribution	.05	57.40**	92.4**(.05**)

	Weekly Public Cyberbulllying x Attribution	-.05		
Post-Social Anxiety				
Step 1	Pre-Cyberbullying	.06	18.31**	.67**
	Pre-Depression	.07		
	Pre-Loneliness	.10		
	Pre-Self-Esteem	.08		
	Pre-Social Anxiety	.07**		
Step 2	Weekly Public Cyberbullying	-.12	15.15**	.70**(.03**)
	Weekly Private Cyberbullying	.08		
Step 3	Weekly Private Cyberbulllying x Attribution	.07	11.95**	.71**(.04**)
	Weekly Public Cyberbulllying x Attribution	-.10		

Table 12

The interactions between public or private cyberbullying and annonymity of cyberbullies

Criterion variable	Predictor	*B*	*F*	$R^2(\Delta R^2)$
Post-Depression				
Step 1	Pre-Cyberbullying	-.12**	6.04**	.40**
	Pre-Depression	.17**		
	Pre-Loneliness	.10		
	Pre-Self-Esteem	.16		
	Pre-Social Anxiety	-.08		
Step 2	Weekly Public Cyberbullying	.14**	5.20**	.45**(.05**)
	Weekly Private Cyberbullying	-.17		
Step 3	Weekly Private Cyberbulllying x Annonymity	-.20	6.09**	.55**(.15**)
	Weekly Public Cyberbulllying x Annonymity	.17**		
Post-Loneliness				
Step 1	Pre-Cyberbullying	-.08	9.24**	.51**
	Pre-Depression	.12		
	Pre-Loneliness	.14**		
	Pre-Self-Esteem	-.13*		

	Pre-Social Anxiety	-.09		
Step 2	Weekly Public Cyberbullying	.09	6.73**	.51**
Step 3	Weekly Private Cyberbullying x Annonymity	-.09	5.33**	.52**(.02**)
	Weekly Public Cyberbulllying x Annonymity	-.15		
Post-Social Anxiety				
Step 1	Pre-Cyberbullying	.04	18.31**	.67**
	Pre-Depression	.07		
	Pre-Loneliness	.10		
	Pre-Self-Esteem	-.07		
	Pre-Social Anxiety	.06**		
Step 2	Weekly Public Cyberbullying	-.06	15.15**	.70**(.03**)
	Weekly Private Cyberbullying	.09		
Step 3	Weekly Public Cyberbulllying x Annonymity	.09**	13.90**	.74**(.04**)
	Weekly Private Cyberbulllying x	-.09		

	Annonymity			
Post-Self Esteem				
Step 1	Pre-Cyberbullying	-.03	96.18**	.92**
	Pre-Depression	.03		
	Pre-Loneliness	-.06		
	Pre-Self-Esteem	.04**		
	Pre-Social Anxiety	.03		
Step 2	Weekly Public Cyberbullying	-.04	69.69**	.92**
	Weekly Private Cyberbullying	-.03		
Step 3	Weekly Public Cyberbulllying x Annonymity	.04*	57.90**	.93**(.01**)
	Weekly Private Cyberbulllying x Annonymity	.04		

Table 13

The interactions between public or private cyberbullying and online friend support

Criterion variable	Predictor	*B*	F	$R^2(\Delta R^2)$
Post-Depression				
Step 1	Pre-Cyberbullying	-.13*	6.04**	40.2**
	Pre-Depression	.16**		
	Pre-Loneliness	.11		
	Pre-Self-Esteem	.19		
	Pre-Social Anxiety	-.08*		
Step 2	Weekly Public Cyberbullying	.11*	5.20**	44.5**(4.3**)
	Weekly Private Cyberbullying	-.10		
Step 3	Weekly Public Cyberbulllying x Friend support	-.09	4.02**	44.6**(4.4**)
	Weekly Private Cyberbulllying x Friend support	-.07		
Post-Loneliness				
Step 1	Pre-Cyberbullying	-.08	9.24**	50.7**
	Pre-Depression	.12		
	Pre-Loneliness	.13**		
	Pre-Self-Esteem	.-13*		
	Pre-Social Anxiety	-.10*		
Step 2	Weekly Public	.07	6.73**	50.9**(.02**)

	Cyberbullying			
	Weekly Private Cyberbullying	.06	5.23**	.51**(.04**)
Step 3	Weekly Public Cyberbulllying x Friend support	.10		
	Weekly Private Cyberbulllying x Friend support	-.07		
Post-Social Anxiety				
Step 1	Pre-Cyberbullying	.06	18.31**	.67**
	Pre-Depression	.08*		
	Pre-Loneliness	.10		
	Pre-Self-Esteem	.09		
	Pre-Social Anxiety	.07**		
Step 2	Weekly Public Cyberbullying	-.11*	15.15**	.70**(.03**)
	Weekly Private Cyberbullying	.08		
Step 3	Weekly Public Cyberbulllying x Friend support	.08	11.91**	.70**(.03**)
	Weekly Private Cyberbulllying x Friend support	-.10		

Post-Self Esteem

Step 1	Pre-Cyberbullying	-.03	96.18**	91.8**
	Pre-Depression	-.03		
	Pre-Loneliness	-.05		
	Pre-Self-Esteem	.05		
	Pre-Social Anxiety	.02		
Step 2	Weekly Public Cyberbullying	-.04	69.69**	91.9**(.01**)
	Weekly Private Cyberbullying	.03		
Step 3	Weekly Public Cyberbulllying x Friend support	.05	61.34**	92.9(1.1**)
	Weekly Private Cyberbulllying x Friend support	.05		

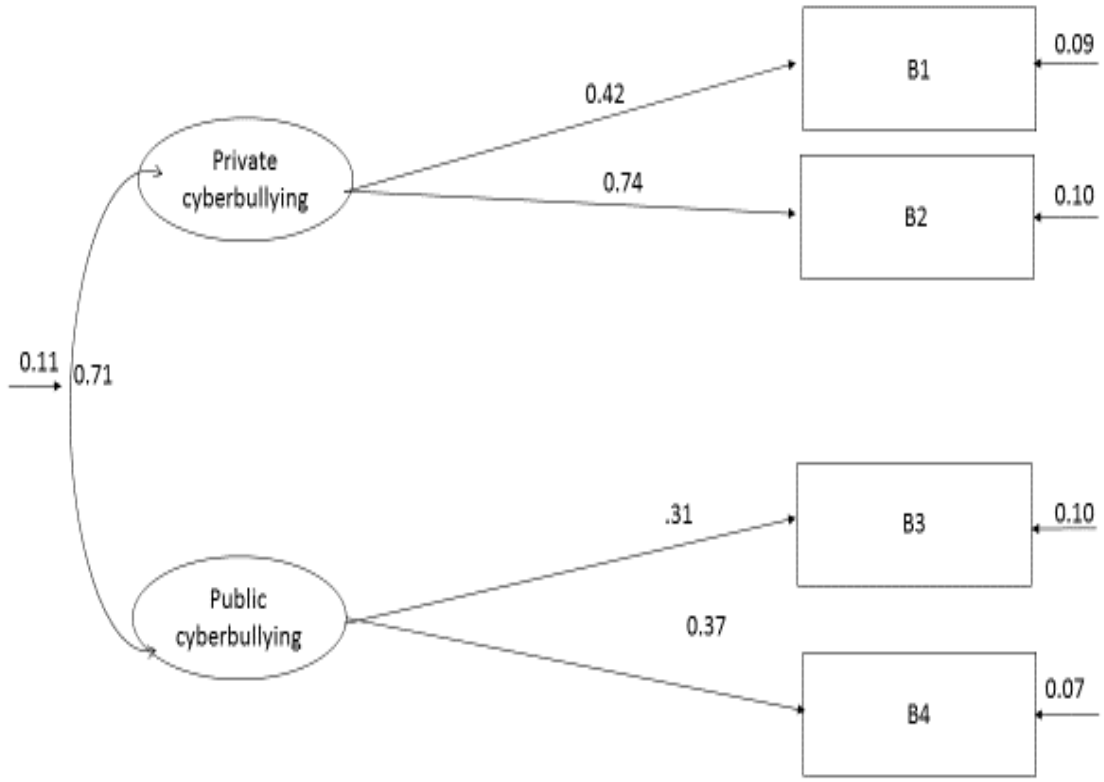

Figure 1. Confirmatory Factor Analyses for weekly Private versus Public cyberbullying.

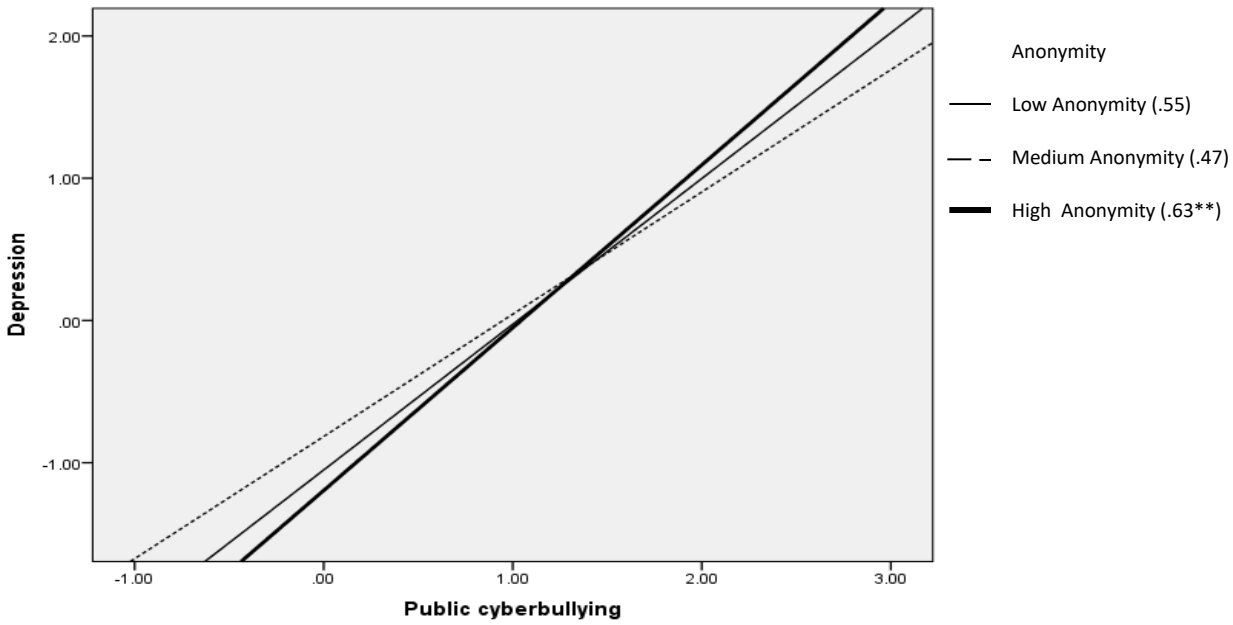

Figure 2. The moderating role of annonymity of cyberbullies in the relation between public cyberbullying and depression

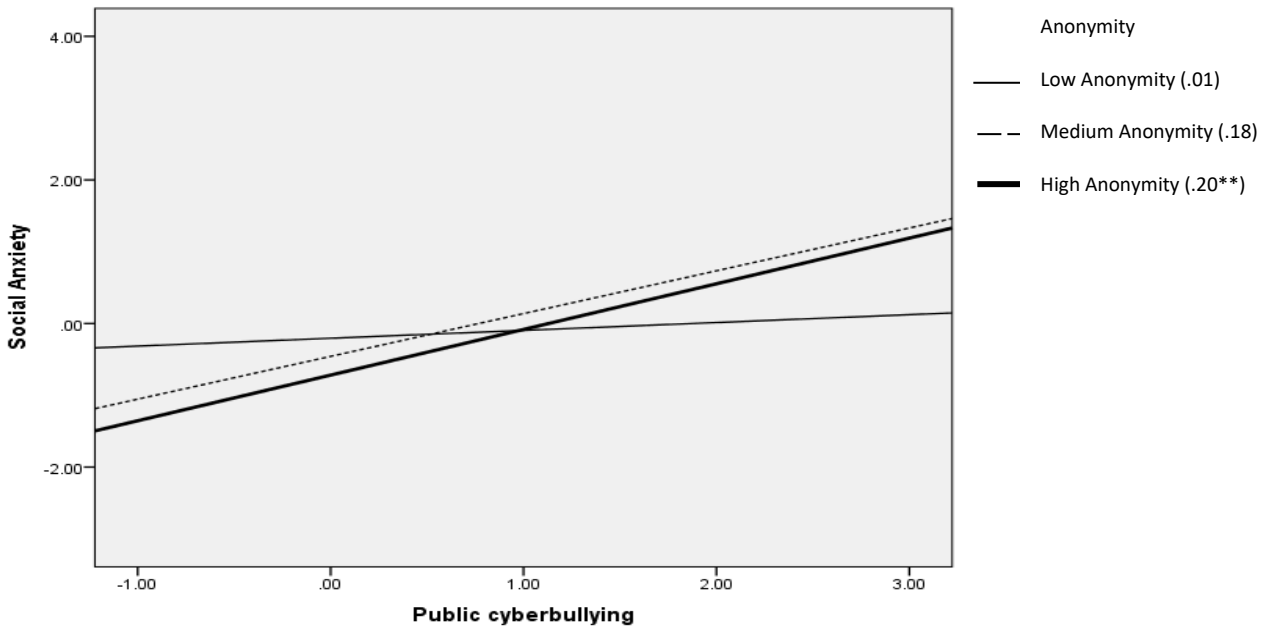

Figure 3. The moderating role of anonymity of cyberbullies in the relation between public cyberbullying and social anxiety

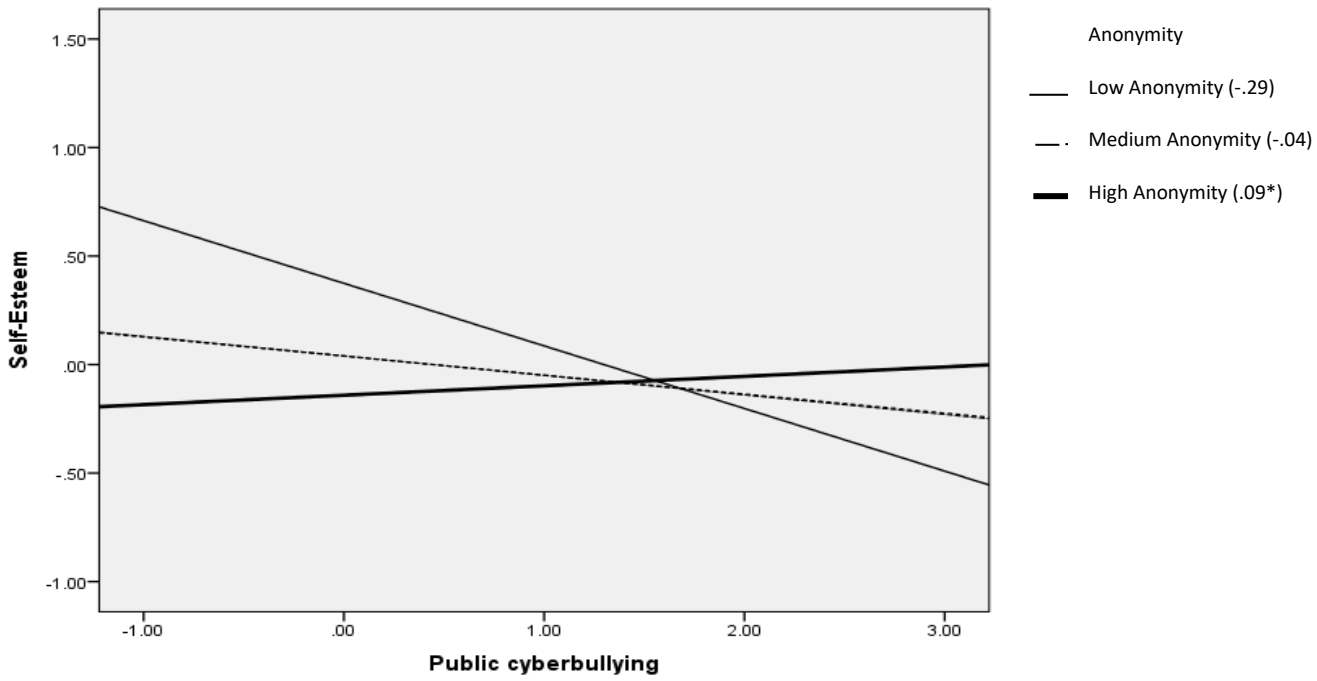

Figure 4. The moderating role of annonymity of cyberbullies in the relation between public cyberbullying and self-esteem

References

Abu Bakar, H. S. (2015). The emergence themes of cyberbullying among adolescences. *International Journal of Adolescence and Youth*, *20*(4), 393-406.

Aoyama, Ikuko, Terrill F. Saxon, and Danielle D. Fearon. "Internalizing problems among cyberbullying victims and moderator effects of friendship quality." *Multicultural Education & Technology Journal* 5.2 (2011): 92-105**.**

Agatston, P. W., Kowalski, R. M., & Limber, S. P. (2007). Students' perspectives on cyberbullying. *Journal of Adolescence*, 41, S59–S60

Aiken, L. S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Newbury Park, CA: Sage.

Anderson, C., Miller, R., Riger, A., Dill, J., & Sedikides, C. (1994). Behavioral and characterological attribuional styles as predictors of depression and loneliness: Review, refinement, and test. *Journal of Personality and Social Psychology*, 66, 549–558.

Barlett, C. P., & Gentile, D. A. (2012). Long-term psychological predictors of cyber-bullying in late adolescence. *Psychology of Popular Media Culture*, 2, 123-135.

Belsey, B. (2004). 2004-07-15. Available from www.cyberbullying.ca..

Belsey, B. (2008). Cyberbullying. Retrieved August 03, 2008, from, http://www.cyberbullying.org.

Benjamini, Y. & Hochberg, Y. (1995) Controlling the false discovery rate: a practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society*, *B57*, 289-300.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological bulletin*, *107*(2), 238.

Berndt, T.J., Hawkins, J.A., & Jiao, Z. (1999). Influences of friends and friendships on adjustment to junior high school. *Merrill-Palmer Quarterly*,45, 13–41

Berson, I. R., Berson, M. J., & Ferron, J. (2002). Emerging risks of violence in the digital age: Lessons for educators from an online study of adolescent girls in the United States. Journal of School Violence, 1(2), 51-72.

Bollmer, J. M., Milich, R., Harris, M. J., & Maras, M. (2005). A friend in need: Friendship quality, internalizing/externalizing behavior, and peer victimization. *Journal of Interpersonal Violence*, 20, 701–712.

Boivin, M., & Hymel, S. (1997). Peer experiences and social self-perceptions: A sequential model. *Developmental Psychology*,*33*, 135–145.

Boivin, M., Hymel, S., & Hodges, E. (2001). Toward a process view of peer rejection and harassment. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school: The plight of the vulnerable and victimized (pp. 265-309).* New York: Guilford

Boivin, M., Hymel, S., & Bukowski W.M. (1995). The roles of social withdrawal, peer rejection, and victimization by peers in predicting loneliness and depressed mood in childhood. *Development and Pyschopathology*,7, 765 – 785.

Brown, G. T. (2006). Teacher's Conceptions of assessment: Validation of an Abridged Version 1,2. *Psychological reports*, *99*(1), 166-170.

Byrne, B. M. (2005). Factor analytic models: Viewing the structure of an assessment instrument from three perspectives. *Journal of personality assessment*, *85*(1), 17-32.

Bukowski, W. M., Hoza, B., & Boivin, M. (1994). Measuring friendship quality during pre- and early adolescence: The development and psychometric properties of the Friendship Qualities Scale. *Journal of Social and Personal Relationships*, *11*, 471-484.

Bukowski, W. M., & Cillessen, A. H. (1998). *Sociometry then and now: Building on six decades of measuring children's experiences with the peer group*. Jossey-Bass.

Bukhari, N. I. B. A., Anuar, A. F., Khazin, K. M., & Abdul, T. M. F. B. T. (2015). English Malay Code-Mixing Innovation in Facebook among Malaysian University Students. *Researchers World*, *6*(4), 1

Calais, G. J. (2008). Microgenetic analysis of learning: Measuring change as it occurs. In *National Forum of Applied Educational Research Journal* (Vol. 21, No. 3, pp. 1-7).

Campbell, M. (2005). Cyberbullying: An old problem in a new disgUise'. *Australian journal of Guidance and Counselling*, 15 (I) 68-76.

Çetin, B., Yaman, E. & Peker, A. (2011). Cyber victim and bullying scale: A study of validity and reliability. *Computer&Education*, 57(4),2261-2271.

Chen, X. I. N. Y. I. N., JAnet ChunG, and C. E. L. I. A. Hsiao. "Peer interactions and relationships from a cross-cultural perspective." *Handbook of peer interactions, relationships, and groups* (2009): 432-451.

Cohen, D., Nisbett, R. E., Bowdle, B. F., & Schwarz, N. (1996). Insult, aggression, and the southern culture of honor: An" experimental ethnography.". *Journal of personality and social psychology*, *70*(5), 945.

Cole, D., Peeke. L., & Inguld, C. (1996). Characterological and behavioural self-blame in children:Assessment and development considerations. *Development and Psychopathology*,8, 381-397.

Conger, A. J. (1974). A revised definition for suppressor variables: A guide to their identification and interpretation. *Educational and psychological measurement*, *34*(1), 35-46.

Craig, Wendy M. "The relationship among bullying, victimization, depression, anxiety, and aggression in elementary school children." *Personality and individual differences* 24.1 (1998): 123-130.

Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social-information-processing mechanisms in children's social adjustment. *Psychological Bulletin,* 115, 74–101.

Crick, N. R., Grotpeter, J. K., & Rockhill, C. M. (1999). A social information-processing approach to children's loneliness. In K. J.Rotenberg & S. Hymel (Eds.),Loneliness in childhood and adolescence. New York: Cambridge University Press.

Dake, J.A., J.H. Price and S.K. Telljohann, 2003. The nature and extent of bullying at school. *Journal of School Health*, 73, 173-201.

Danielson, C. M., & Emmers-Sommer, T. M. (2016). "It Was My Fault": Bullied Students' Causal and Controllable Attributions in Bullying Blogs.*Journal of health communication*, *21*(4), 408-414

David-Ferdon, C., Hertz, M. F. (2007). Electronic media, violence, and adolescents: An emerging public health problem. *Journal of Adolescent Health, 41,* S1-S5.

Davidshofer, K. R., and C. O. Murphy. "Psychological testing: principles and applications." *Pearson/Prentice-Upper Saddle River, NJ* (2005).

Darley, J., & Latane, B. (1968). When will people help in a crisis? *Psychology Today*,2,54–57, 70–71.

De Bruyn, Eddy H., and Dymphna C. Van Den Boom. "Interpersonal Behavior, Peer Popularity, and Self-esteem in Early Adolescence." *Social development* 14.4 (2005): 555-573.

Dodge, K. A. (1980). Social cognition and children's aggressive behavior.*Child Development*, 51,162–170

Dodge.K.A., Pettit, G.S., McClaskey, C.L., & Brown, M. Social competence in children. *Monographs of the Society for Research in Child Development*. 1986;51(2)

Dodge, K. A., & Price, J. M. (1994). On the relation between social information-processing

and socially competent behavior in early school-aged children.*Child Development*, 65,1385–1397.

Dooley, J. J., Pyzalsky, J., & Cross, D. (2009). Cyberbullying versus face-to-face bullying. A theoretical and conceptual review. Zeitschrift fur Psychologie/Journal of Psychology, 217(4), 182–188.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook ‘‘friends:” Social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication,* 12(4), 1143–1168.

Facebook statistics by Country. 03-09-2014. Available on http://www.socialbakers.com/facebook-statistics/malaysia

Espelage, Dorothy, Harold Green, and Joshua Polanin. "Willingness to intervene in bullying episodes among middle school students individual and peer-group influences." *The Journal of Early Adolescence* 32.6 (2012): 776-801.

Fanti, K.A., Demetriou, A.G., & HawaV.V. (2002). A longitudinal Study of Cyberbullying: Examining risks and protective factors. *European Journal of Developmental Psychology*, 9(2), 168 – 181.

Fanti, Kostas A., Paul J. Frick, and Stelios Georgiou. "Linking callous-unemotional traits to instrumental and non-instrumental forms of aggression." *Journal of Psychopathology and Behavioral Assessment* 31.4 (2009): 285-298.

Faulstich, M. E., Carey, M. P., Ruggiero, L., Enyart, P., & Gresham, F. (1986). Assessment of depression in childhood and adolescence: An evaluation of the Center for Epidemiological Studies Depression Scale for Children (CES-DC). *The American journal of psychiatry*.

Finkelhor, D., Mitchell, K., & Wolak, J. (2000). Online victimization: A report on the nation’s youth. National Center for Missing & Exploited Children. Retrieved July,

2003, from http://www.unh.edu/ccrc/Youth_Internet_info_page.html.

Gabrielle Page, M., Campbell, F., Isaac, L., Stinson, J., Martin-Pichora, A. L., & Katz, J. (2011). Reliability and validity of the Child Pain Anxiety Symptoms Scale (CPASS) in a clinical sample of children and adolescents with acute postsurgical pain. *Pain*, *152*(9), 1958-1965.

Gasser, U., Maclay, C. & PalfreyJ.G., (2010). Working towards a Deeper Understanding of Digital Safety for Children and Young People in Developing Nation. *Public Law and Legal Theory Working Paper Series*, 10-36.

Gouze, K.R. (1987). Attention and Social problem Solving as correlates of Aggression in Preschool Males. *Journal of Abnormal Child Psychology*, 15(2), 181-197.

Gini, G., Pozzoli, T., Borghi, F., & Franzoni, L. (2008). The role of bystanders in students' perception of bullying and sense of safety. *Journal of School Psychology,46*, 617-638

Graham, S. (2006). Peer Victimization in School: Exploring the Ethnic Context. *Current Directions in Psychological Science*, 15(6), 317-321.

Graham, S., & Juvonen, J. (1998). Self-blame and peer victimization in middle school: An attributional analysis. *Developmental Psychology*, 34, 587–599.

Haidt, J. (2003). The moral emotions. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *Handbook of affective sciences (pp. 852–870).* Oxford, UK: Oxford University Press.

Hawkins, D. L., Pepler, D. J., & Craig, W. M. (2001). Naturalistic observations of peer interventions in bullying. *Social Development*,10, 512–527

Hill, M., 1997. SPSS Missing Value Analysis 7.5. SPSS, Chicago.

Hinduja S, & Patchin J.W. (2009). *Bullying Beyond the Schoolyard: Preventing and Responding to Cyberbullying*. Thousand Oaks, CA: Sage Publications (Corwin Press)

Hodges, E. V., & Perry, D. G. (1999). Personal and interpersonal antecedents and

consequences of victimization by peers. *Journal of Personality and Social Psychology,* 76, 677–685.

Holmbeck, G. N., Thill, A. W., Bachanas, P., Garber, J., Miller, K. B., Abad, M., ... & Zukerman, J. (2008). Evidence-based assessment in pediatric psychology: Measures of psychosocial adjustment and psychopathology. *Journal of Pediatric Psychology*, *33*(9), 958-980.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55.

Huang, Y. & Chou, C. (2010). An analysis of multiple factors of cyberbullying among junior high school students in Taiwan. *Computers in Human Behavior*, 26(2), 1581-1590.

Hunt, M. H., Meyers, J., Jarrett, O., & Neel, J. (2005). *Student survey of bullying behavior: Preliminary development and results from six elementary schools*. Atlanta, GA: Georgia State University, Center for Research on School Safety, School Climate and Classroom Management.

Jackson, L.A., Von-Eye, A., Bioncca, F.A., Barbatsis, G., Zhao, Y., & Fitzgerald, H.E. *Developmental Psychology*, 42(3), , 429-435

Janoff-Bulman, R. (1979). Characterological and behavioral self-blame: Inquiries into depression and rape. *Journal of Personality and Social Psychology*, *37,* 1798- 1809.

Janoff-Bulman, R. (1992*). Shattered assumptions: Towards a new psychology of trauma.* New fork: The Free Press.

Johnson, J. M. (2009, March). *The impact of cyber bullying: A new type of relational aggression.* Paper based on a program presented at the American Counseling Association Annual Conference and Exposition, Charlotte, NC.

Joinson, Adam N. "Internet behaviour and the design of virtual methods."*Virtual methods: Issues in social research on the Internet. Oxford: Berg*(2005): 21-34.

Kärnä,A.,Salmivalli,C.,Poskiparta,E.,&Voeten,M.J.M.(2008,May).Do bystanders influence the frequency of bullyingin aclassroom?The XIth EARA conference, Turin, Italy

Kärnä, A., Voeten, M., Little, T., Poskiparta, E., Kaljonen, A., & Salmivalli, C. (2011). A large-scale evaluation of the KiVa anti-bullying program. *Child Development*, 82, 311-330.

Kaslow, N., Stark, K., Printz, B., Livingston, R., & Ling Tsai, S. (1992). Cognitive triad inventory for children: Development and relation to depression and anxiety. *Journal of Clinical and Child Psychology, 21,* 339-347.

Kendall, P., Stark, K., & Adam, T. (1990). Cognitive deficit or cognitive distortion in childhood depression. *Journal of Abnormal Child Psychology, 18,* 255-270.

Kline, R. B. (2004). Beyond significance testing: Reforming data analysis methods in behavioral research.

Ko, C. H., Yen, J. Y., Yen, C. F., Chen, C. S., & Chen, C. C. (2012).The association between internet addiction and psychiatric disorder:a review of the literature. *European Psychiatry,* 27,1–8.

Kochenderfer, B. J., & Ladd, G. W. (1996). Peer victimization: Cause or consequence of school maladjustment? *Child Development,* 67, 1305–1317.

Kochenderfer-Ladd, B., & Skinner, K. (2002). Children's coping strategies: Moderators of the effects of peer victimization? Developmental Psychology, 38(2), 267-278.

Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., & Lattanner, M. R. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological bulletin*, *140*(4), 1073.

Kowalski, R. M., & Limber, S. P. (2007). Electronic bullying among middle school students.

Journal of Adolescent Health, *41*, S22-S30.

Kowalski, R. M., Limber, S. P., & Agatston, P. W. (2008). Cyber Bullying. Malden:Blackwell Publishing.

Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: a new depression diagnostic and severity measure. *Psychiatr Ann*, *32*(9), 1-7.

Kwan, G. & Skoric, M. M. (2013). Facebook bullying: An extension of battles in school. *Computers in Human Behavior*, 29, 16-25.

La Greca, A. M., & Lopez, N. (1998). Social anxiety among adolescents: Linkages with peer relations and friendships. *Journal of abnormal child psychology*, *26*(2), 83-94.

Landes, R. (2007). Edward Said and the Culture of Honour and Shame: Orientalism and Our Misperceptions of the Arab–Israeli Conflict. *Israel Affairs*, *13*(4), 844-858.

Law, D. M., Shapka, J. D., Domene, J. F., & Gagne, M. H. (2012). Are cyberbullies really bullies? An investigation of reactive and proactive online aggression. *Computers in Human Behavior*, *28*, 664-672.

Lenhart, M., & Madden, M. (2007). Teens, Privacy and Online Social Networks. How teens manage their online identities and personal information in the age of MySpace. Pew Internet & American Life Project Report. Retrieved June 17, 2009, from http://www.pewinternet.org/~/media//Files/Reports/2009/PIP_Adult_social_networking_dat _memo_FINAL.pdf.pdf.

Li, Q. (2005). Cyberbullying in schools: Nature and extent of adolescents_ experience. Paper presented at the Annual American Educational Research Association Conference, Montreal.

Lord,S., Eccles, J. *S.*, ***6r*** McCarthy, K. (1994). Risk and protective factors in the transition to junior high school. *Journal of Early Adolescence,* **14,** 162-199.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological methods*, *1*(2), 130.

Maxwell, A. (2001). *Cyberstalking.* Unpublished manuscript, Auckland University, New Zealand.

McCarthy, P., Rylance, J., Bennett, R., & Zimmermann, H. (2001). Bullying: From backyard to boardroom. (2nd ed.) Sydney, Australia: The Federation Press.

MacCallum,R.C.,Browne,M.W.,&Sugawara,H.M.(1996).Power analysis and determination of sample size for covariance structure modelling. *Psychological Methods*, 1, 130-149.

Meadows, B. (2005, March 14). The Web: the bully's new playground. People.com, 63(10). http://www.people.com/people/archive/article/0,,20147083,00.html Retrieved 20.06.10.

Menesini, E., and C. Spiel. (2012). Introduction: Cyberbullying: Development, consequences,risk and protective factors,European Journal of Developmental Psychology 9(2), 163-167.

McLeod, P. L., Baron, R. S., Mart, M. W., & Yoon, K. (1997). The eyes have it: Minority influence in face-to-face and computermediated group discussion. *Journal of Applied Psychology*, 82, 706–718.

Mishna, F., Khoury – Kassabri, M., Gadalla, T. & Daciuk, J. (2012). *Children and Youth Services Review*, 34(1), 63-70.

Mitchell, K.J., Ybarra, M.L., & Finkelhor, D. (2007). The Relative Importanceof Online Victimizationin Understanding Depression, Delinquency, and Substance Use. *Child Maltreatment*, 12(4), 314-324.

Modecki, K.L.(2009).It's a Rush: Psychosocial content of antisocial decision making. *Law*

and Human Behavior, 33(3), 183-193

Monahan, K. C., Steinberg, L., & Cauffman, E. (2009). Affiliation with antisocial peers, susceptibility to peer influence, and antisocial behavior during the transition to adulthood. *Developmental Psychology*, 45(6), 1520-1530

Mustaffa, Normah, et al. "Diffusion of innovations: The adoption of Facebook among youth in Malaysia." *The Public Sector Innovation Journal* 16.3 (2011): 1-15.

Nabuzoka, David. "Experiences of bullying-related behaviours by English and Zambian pupils: a comparative study." *Educational Research* 45.1 (2003): 95-109.

Nansel, T. R., Craig, W., Overpeck, M. D., Saluja, G., & Ruan, W. J. (2004). Cross-national consistency in the relationship between bullying behaviors and psychosocial adjustment. *Archives of pediatrics & adolescent medicine*, *158*(8), 730-736.

Nansel, T. R., Overpeck, M., Pilla, R. S., Ruan, W. J., Simons-Morton, B., & Scheidt, P. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *JAMA: Journal of the American Medical Association*, *285*, 2094-2100.

National Center for Missing & Exploited Children (2000). Online Victimization: A Report on the Nation's Youth. <http://www.missingkids.comen_US/publications/NC62.pdf> Retrieved 12.07.10.

Navarro, R., Yubero, S., Larrañaga, E., & Martínez, V. (2012). Children's cyberbullying victimization: Associations with social anxiety and social competence in a Spanish sample. *Child indicators research*, *5*(2), 281-295.

Nocentini, A., Calmaestra, J., Schultze-Krumbholz, A., Scheithauer, H., Ortega, R., & Menesini, E. (2010). Cyberbullying: Labels, behaviours and definition in three European countries. *Australian Journal of Guidance and Counselling*, 20(2), 129 142.

Nolen-Hoeksema, S., & Girgus, J. S. (1994). The emergence of gender differences in depression during adolescence. *Psychological bulletin*, *115*(3), 424.

Olweus, D. (1993). Bullying at school. Oxford, UK: Blackwell Publishers.

O'Connell, P., Pepler, D., & Craig, W. (1999). Peer involvement in bullying: Insights and challenges for intervention. *Journal of Adolescence*,22, 437–452.

Panak, W. F., & Garber, J. (1992). Role of aggression, rejection, and attributions in the prediction of depression in children. *Development of Psychopathology, 4*, 145-165.

Polanin, Joshua R., Dorothy L. Espelage, and Therese D. Pigott. "A meta-analysis of school based bullying prevention programs' effects on bystander intervention behavior." *School Psychology Review* 41.1 (2012): 47.

Paulson, A. (2003). Internet bullying, 07-15-2004. Available from http://www.csmonitor.com/2003/1230/p11s01legn.htm..

Patchin,J.W.,&Hinduja,S.(2006).Bulliesmovebeyondtheschoolyard:Apreliminary look at cyberbullying. *Youth Violence and Juvenile Justice*, 4, 148–169

Pellegrini, A. D. (2002). Bullying, victimization, and sexual harassment during the transition to middle school. *Educational Psychologist*,37, 151–163

Pellegrini, A.D. & Long J.D. (2002). *British Journal of Developmental Psychology*, 20, 259-280.

Pempek, T. A., Yermolayeva, Y. A., & Calvert, S.L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology*, 30, 227–238.

Prinstein, M. J., Boergers, J., & Vernberg, E. M. (2001). Overt and relational aggression in adolescents: Social-psychological adjustment of aggressors and victims. *Journal of clinical child psychology*, *30*(4), 479-491.

Prinstein, M. J., Cheah, C. S. L., Guyer, A. E. (2005). Peer victimization, cue interpretation, and internalizing symptoms: Preliminary concurrent and longitudinal findings for children and adolescents. *Journal of Clinical and Child and Adolescent Psychology, 34*, 11-24.

Raskauskas, J., & Stoltz, A. D. (2007). Involvement in traditional and electronic bullying among adolescents. *Developmental Psychology*,*43*, 564-575.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and social psychology bulletin*, *27*(2), 151-161.

Rosenberg, M. (1965). Society and the adolescent self-image.

Roslam, A. (2011). Facebook Usage Among Malaysian Youths. 10-20-2011. Available from http://www.ukm.my/news/index.php/en/extras/875-facebook-usage-among malaysian-youths.html

Ribak, R. (2001). Like immigrants: Negotiating power in the face of the home computer. *New Media and Society*, 3, 220-238.

Rubenstein, C., & Shaver, P. (1982). The experience of loneliness. *Loneliness: A sourcebook of current theory, research and therapy*, 206-223.

Runions, K.C. (2013). Toward a Conceptual Model of Motive and Self-Control in Cyber-Aggression: Rage, Revenge, Reward, and Recreation. *Journal of Youth and Adolescence*, 42, 751-771.

Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of personality assessment*, *66*(1), 20-40.

Russel, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of personality and social psychology*, *39*(3), 472-480.

Sacco, W., & Nicholson, K. (1999). A social-cognitive perspective on reassurance seeking and depression. *Psychological Inquiry, 10,* 298-302.

Salmivalli, C. (2010). Bullying and the peer group: A review. *Aggression and Violent Behavior, 15,* 112–120.

Salmivalli, C., Lagerspetz, K., Björkqvist, K., Österman, K., & Kaukiainen, A. (1996). Bullying as a group process: Participant roles and their relations to social status within the group. *Aggressive Behavior*,22,1–15

Salmivalli, C., & Peets, K. (2008). Bullies, victims, and bully–victim relationships. In K.Rubin, W. Bukowski & B. Laursen (Eds.),*Handbook of peer interactions, relationships,and groups(pp. 322–340).* New York: Guilford Press

Schmitt, D. P., & Allik, J. (2005). *Simultaneous administration of the Rosenberg Self-Esteem Scale in 53 nations: exploring the universal and culture-specific features of global self-esteem*. Journal of personality and social psychology, 89(4), 623.

Schumacker, R. E., & Lomax, R. G. (2004). *A beginner's guide to structural equation modeling*. Psychology Press.

Sroufe, C. A., & Rutter, M. (1984). The domain of developmental psychopathology. *Child Development, 55,* 17-29.

Shariff, S. and Gouin, R. (2005), *Cyber-Dilemmas: Gendered Hierarchies, Free Expression and Cyber-Safety in Schools*. Presented at "Safety and Security in a Networked World: Balancing Cyber-Rights and Responsibilities," Oxford Internet Institute conference, Oxford , U.K. , September 8–10, 2005. Available at http://www.oii.ox.ac.uk/research/cybersafety/extensions/pdfs/papers/shaheen_shariff.pdf.

Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology*, 49, 147–154.

Shapira, N. A., Goldsmith, T. D., Keck, P. E., Jr., Khosla, U. M., & McElroy, S. L. (2000). Psychiatric features of individuals with problematic Internet use. *Journal of Affective Disorders,* 57, 267–272.

Smith, P.K., & Brain, P. (2009). 'Bullying in schools: Lessons from two decades of research'. *Aggressive Behavior*,26,1-9.

Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry*, 49, 376–385.

Smith, P.K. (2007). Cyberbullying: Abusive relationships in Cyberspace. *Zeitschrift für Psychologie/Journal of Psychology*, 217(4), 180-181.

Smith, P. K. & Steffgen, G. (Eds.) (2013). *Cyberbullying, technology and coping.* Oxfordshire: Psychology Press.

Snider, M., & Borel, K. (2004). *Stalked by a cyberbully*. Macleans.

Spitzberg, G. H. (2006). Preliminary development of a model and a measure of computer-mediated communication (CMC) competence. *Journal of Computer Mediated Communication*, 11, 629–666.

Spears, B., Slee, P., Owens, L., & Johnson, B. (2009). Behind the scenes and screens insights into the human dimension of covert and cyberbullying. *Zeitschrift fur Psychologie /Journal of Psychology*, 217 (4), 189–196

Spielberger, C.D. (1983). *Manual for the State-Trait Anxiety Inventory STAI (Form-Y).* Palo-Alto, CA: Consulting Psychology Press.

Steiger, J. H. (1998). A note on multiple sample extensions of the RMSEA fit index.

Steinfield, C., Ellison, N. B., & Lampe, C. (2008). Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *Journal of Applied Developmental Psychology*, *29*(6), 434-445.

Storch, E. A., Brassard, M. R., & Masia-Warner, C. L. (2003). The relationship of peer victimization to social anxiety and loneliness in adolescence. *Child Study Journal*, 33, 1–18.

Swearer, S. M., Song, S. Y., Cary, P. T., Eagle, J. W., & Mickelson, W. T. (2001). Psychosocial correlates in bullying and victimization: The relationship between depression, anxiety, and bully/victim status. *Journal of Emotional Abuse*, 2, 95–121.

Tan, W. Z. (2008, December 15). Singapore: Cyber bullies turn vicious. The StraitsTimes. <http://www.asiamedia.ucla.edu/article-southeastasia.asp?parentid=102200> Retrieved 15.07.10.

Ting, H., Wong, W. P. M., de Run, E. C., & Lau, S. Y. C. (2015). Beliefs about the Use of Instagram: An Exploratory Study. *International Journal of business and innovation*, *2*(2), 15 31.

Tokunaga, R.S. 2010. Following you home from school: A critical review and synthesis of research on cyber-bullying victimization,*Computers in Human Behavior* 26(3), 277-287.

Valkenburg, Patti M., Alexander P. Schouten, and Jochen Peter. "Adolescents' identity experiments on the Internet." *New media & society*7.3 (2005): 383-402.

Valkenburg, P.M., & Peter, J. (2007). Preadolescents' and adolescents' online communication and their closeness to friends. Developmental Psychology,43, 267–277.

Vandebosch, H. & Van Cleemput, K. (2008) 'Defining Cyberbullying: A Qualitative Research into the Perceptions of Respondents', *Cyberpsychology and Behavior* 11(4):499–503.

Van der Wal, M. F., De Wit, C. A., & Hirasing, R. A. (2003). Psychosocial health among young victims and offenders of direct and indirect bullying. *Pediatrics*, *111*(6), 1312 - 1317.

Varjas, K., Meyers, J., Hunt, M. H. (2006). *Student survey of bullying behavior: Revised 2 (SSBB-R2)*. Atlanta, Georgia: Georgia State University, Center for Research on School Safety, School Climate, and Classroom Management.

Vassar, M., & Crosby, J. W. (2008). A reliability generalization study of coefficient alpha for the UCLA Loneliness Scale. *Journal of Personality Assessment*, *90*(6), 601-607.

Vernberg, E. M., Abwender, D. A., Ewell, K. K., & Beery, S. H.(1992). Social anxiety and peer relationships in early adolescence: A prospective analysis.*Journal of Clinical Child Psychology*, 21,189–196.

Wang, J., Nansel, T. R., & Iannotti, R. J. (2011). Cyber and traditional bullying: Differential association with depression. *Journal of adolescent health*, *48*(4), 415-417.

Weiner, B. (1986*). An attributional theory of motivation and emotion*. New York: Springer-Verlag.

Weiner, B. (1995). *Judgments of responsibility: A foundation for a theory of social conduct*. New York: Guilford Press.

Williams, K. D., & Jarvis, B. (2006). Cyberball: A program for use in research on interpersonal ostracism and acceptance. *Behavior research methods*, *38*(1), 174-180.

Windle, Michael. "A study of friendship characteristics and problem behaviors among middle adolescents." *Child development* (1994): 1764-1777.

Wolak, J., Mitchell, K. M., & Finkelhor, D. (2002). Close online relationships in a national sample of adolescence. *Adolescence*,37(147), 441–455.

Wolak, J., Mitchell, K. J., & Finkelhor, D. (2006). Online victimization of youth: 5 years later. Alexandria, VA: National Center for Missing & Exploited Children (No. 07-06-

025).

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models an evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement,73*(6), 913-934.

Williams, K. & Guerra, N. (2007). Prevalence and Predictors of Internet Bullying. *Journal of Adolescent Health.* , 41(6), 14-21.

Ybarra, M. L. (2004). Linkages between depressive symptomatology and Internet harassment among young regular Internet users.*CyberPsychology & Behavior, 7*(2), 247-257.

Ybarra, M. L., Mitchell, K. J., Finkelhor, D., & Wolak, J. (2007). Internet prevention messages: Are we targeting the right onlinebehaviors? Archives of Pediatric and Adolescent Medicine,161 , 138–145

Ybarra, M. L., Diener-West, M., & Leaf, P. J. (2007). Examining the overlap in internet harassment and school bullying: Implications for school intervention. *Journal of Adolescent Health,*41, 42-50.

Young, K. S., & de Abreu, C. N. (2011). *Internet addiction: A handbook and guide to evaluation and treatment*. Hoboken: John Wiley & Sons Inc.

Yuan, K. H., & Bentler, P. M. (2004). On chi-square difference and z tests in mean and covariance structure analysis when the base model is misspecified. *Educational and Psychological measurement, 64*(5), 737-757.

Zadro, L., Williams, K. D., & Richardson, R. (2004). How low can you go? Ostracism by a computer is sufficient to lower self-reported levels of belonging, control, self-esteem, and meaningful existence. *Journal of Experimental Social Psychology*, 40, 560-567.

Zywica, J., & Danowski, J. (2008). The faces of Facebookers: Investigating social enhancement and social compensation hypotheses; predicting Facebook™ and offline

popularity from sociability and self-esteem, and mapping the meanings of popularity with semantic networks. *Journal of Computer-Mediated Communication, 14*(1), 1-34.

Appendix 1 – Consent form

Parent Consent Form-Malaysian Version

Agreement to Participate in Research on Adolescent's Online Experiences and Psychological Functioning

Yiyuan Xu, & Mei Sze Choo

You are asked to participate in a research study conducted by Yiyuan Xu and Mei Sze Choo from University of Hawaii, USA. The purpose of this study is to understand adolescent's experiences online in relation to their psychological functioning. We are particularly interested in your child's opinions because we want to find out how your adolescent's psychological functioning might be related to experiences while communicating online.

If you agree to let your child participate in this study, we will ask your child questions about his/her online experiences and psychological functioning. First, we will ask your child to fill up surveys on their own psychological functioning. Second, there will be weekly assessments where we will prompt your child to answer questions about their interaction online,i.e., Facebook for three months. Finally, there will be a final survey similar to the first one to be completed by your child in school.

Research data will be kept confidential. All research records will be stored in a locked file in the primary investigators' offices and in a hard disk for the duration of the research project. All the research records that involve your child's identity information will be removed upon completion of the project.

Participation in this research project is completely voluntary. Your child may choose not to answer any question(s) if you wish. Your child is free to withdraw from participation during the duration of the project. If you have any questions or concerns about the research, please feel free to contact Ms. Choo Mei Sze (Tel: 012-2941132) during normal business hours (9:00am to 5:00 pm Monday to Friday). If you have any questions regarding your rights as a parent of the research participant, please contact the University Hawaii Committee on Human Studies at 011-808-956-5007.

Participant:
I have read and understand the above information, and agree/disagree to allow my child to participate in this research project.

_____	_____
Name (printed)	Contact number
_____	_____
Child's name	Child's class
_____	_____
Signature	Date

Appendix 2

The Demographic form

The Demographic form

Name _____ Gender: Male _____ Female_____

Birthday _____

Please help us answer the following questions regarding your family background by ticking or filling in the blanks as necessary.

1. Are you the only child in the family? Yes _____ No _____

2. Your age is: _____

4. Your ethnicity is: ____ Malay ____Chinese ____Indian
_____Others (Please specify)

5. Does your dad currently have a job? Yes _____ No _____
If yes, what's your occupation and job position? _____

6. What is your parent's current marital status?
(1) Married without divorce (2) Married after divorce (3) Divorced

9. Your mom's ethnicity is: ____ Malay ____Chinese ____Indian
_____Others (Please specify)

10. Does your mom have a job? Yes _____ No _____
If yes, what's your spouse's occupation and job position? _____

11. Who else are there in your family except you, your spouse, and your child?

_____

12. What is your monthly family income?
____ Below 2000
____2000-4999
____5000-7999
____8000- 11999
____ Above 12000

Appendix 3

Weekly Assessments

The following items are statements about your experiences on Facebook. Please circle the

your answer.

1. Did you receive any nasty/insulting comments on Facebook over the past week?

___ Never ___ Once/Twice ___ A few times ___Many times

2. Did you know the name(s) of the person(s) who posted nasty/insulting comments on Facebook over the past week about you)?

Yes No

3. You received nasty/insulting comments on Facebook over the past week because these kinds of things always happen to you but not to other adolescents.

___Not True ___ Hardly Ever True___ Usually True___Really True

4. You received nasty/insulting comments over the past week because you won't fight back on Facebook.

___Not True ___ Hardly Ever True___ Usually True___Really True

5. My friend(s) stood up for me when someone posted nasty/insulting comments about me on Facebook over the past week.

___Not True ___ Hardly Ever True___ Usually True___Really True

6. My friend(s) showed his/her support for me when someone posted a nasty/insulting comment about me on Facebook over the past week.

___Not True ___ Hardly Ever True___ Usually True___Really True

7. Did you receive any nasty/insulting personal messages on Facebook over the past week?

___ Never ___ Once/Twice ___ A few times ___Many times

8. Did you know the name(s) of the person(s) who sent these nasty/insulting personal messages to you on Facebook over the past week?

Yes No

9. You received nasty/insulting personal messages on Facebook over the past week because these kinds of things always happen to you but not to other adolescents.

___Not True ___ Hardly Ever True___ Usually True___Really True

10. You received nasty/insulting personal messages on Facebook over the past week because you won't fight back on Facebook.

___Not True ___ Hardly Ever True___ Usually True___Really True

11. My friend(s) showed his/her support for me when someone sent these nasty/insulting personal messages on Facebook to me over the past week.

___Not True ___ Hardly Ever True___ Usually True___Really True

12. Did anyone spread rumors about you on Facebook to damage your reputation over the past week?

___ Never ___ Once/Twice ___ A few times ___Many times

13. Did you know the name(s) of the person(s) who spread these rumours about you on Facebook over the past week?

Yes No

14. Someone spread rumors on Facebook about you over the past week because these kinds of things always happen to you but not to other adolescents..

___Not True ___ Hardly Ever True___ Usually True___Really True

15. Someone spread rumors about your over the past week because you won't fight back on Facebook

___Not True ___ Hardly Ever True___ Usually True___Really True

16. My friend(s) stood up for me when someone spread rumors about me on Facebook over the past week.

___Not True ___ Hardly Ever True___ Usually True___Really True

17. My friend(s) showed his/her support for me when someone spread rumors about me on Facebook over the past week.

___Not True ___ Hardly Ever True___ Usually True___Really True

18. Did someone tag you on a nasty/insulting Facebook post over the past week?

___ Never ___ Once/Twice ___ A few times ___Many times

Appendix 4

Internet Experiences Questionnaire

Which of the following electronic devices do you have access to? (check all that apply)
_ Computer with email, Facebook, Instagram, Twitter
_ Webpage building software
_ Cell phones with text-message/what's app capabilities
_ Cell phone with picture taking capabilities
_ Digital Camera?

For the following section, circle the answer based on your experiences in school, online, and on your phone.

School Experiences

In the past month, how often have the following things happened to you at school?

a. You have been hit, pushed, or shoved?

___ Never ___ Once/Twice ___ A few times ___Many times

b. You have been teased or called mean names?

___ Never ___ Once/Twice ___ A few times ___Many times

c. People have started rumors about you?

___ Never ___ Once/Twice ___ A few times ___Many times

d. People have left you out on purpose?

___ Never ___ Once/Twice ___ A few times ___Many times

Text-message

a. During this past month did someone send you any nasty or harassing text messages?

Yes No

b. How many times did this occur?:

___ Never ___ Once/Twice ___ A few times ___Many times

c. Did you know who the person was?

Yes No

Internet

a. During this school year did someone create a website about you, use your pictures on-line without permission, or create forums about you?

Yes No

b. How many times did this occur?:

___ Never ___ Once/Twice ___ A few times ___Many times

c. Did you know who the person was?

Yes No

Facebook

Direction: Please answer the questions by circling on the answers that best represent your daily Facebook usage.

a. Are you a member of Facebook?

Yes No

b. If you are, how many friends do you have on Facebook?

	Strongly Aree	Agree	Disagree	Strongly Disagree
Facebook is part of my everyday activity				
I am proud to tell people I am on Facebook				
Facebook has become part of my daily routine				
I feel out of touch if I do not log into Facebook for awhile				
I feel that I am part of the Facebook Community				
I would be sorry if Facebook shuts down				

c. During this past month has anyone posted nasty/insulting comments about you on Facebook?

Yes No

d. How many times did this occur?:

___ Never ___ Once/Twice ___ A few times ___Many times

e. Did you know who the person was?

Yes No

f. During this past month, have you received any insulting private Facebook messages?

Yes No

g. How many times did this occur?:

___ Never ___ Once/Twice ___ A few times ___Many times

h. Did you know who the person was ?

Yes No

i. During this past month, has anyone spread rumors about you on Facebook that damaged your reputation?

Yes No

j. How many times did this occur?:

___ Never ___ Once/Twice ___ A few times ___Many times

k. Did you know who the person was?

Yes No

Picture Phone

a. During this past month did someone take pictures of you with picture phones without permission and show the pictures to others to embarrass you?

Yes No

b. How many times did this occur?:

___ Never ___ Once/Twice ___ A few times ___Many times

c. Did you know who the person was?

Yes No

Appendix 5

The Attribution Questionnaire

Directions: You are going to read about something that could happen to you and I'd like you to imagine that this is happening to you at school. Completely fill in the circle that best answers the question from "Definitely Yes" to "Definitely No".

	Definitely "Yes"	Sometimes "Yes"	Sometimes "No"	Definitely "No"
Happens to me not other kids	1	2	3	4
Happens to me because I won't cause trouble	1	2	3	4
They do this to me because I won't fight back	1	2	3	4
Happens to me because other kids treat me this way	1	2	3	4
Why me and not other kids?	1	2	3	4
Always get into situations like this	1	2	3	4
This will happen to me again	1	2	3	4
If I was a cooler kid, I won't get picked on	1	2	3	4

Appendix 6

Friendship Qualities Scale

APPENDIX 10
FRIENDSHIP QUALITIES SCALE (ENGLISH VERSION)

William M. Bukowski

Participant ID:_____ Friend's Name: _____

Please answer the following questions about your best friend. Please think only of the friend named above.

1 Not True	2 Hardly Ever True	3 Sometimes True	4 Usually True	5 Really True

1. When we can, my friend and I spend all our free time together.	1	2	3	4	5
2. I can get into fights with my friend.	1	2	3	4	5
3. If I needed a little money, my friend would loan it to me.	1	2	3	4	5
4. If I have a problem at school or at home, I can talk to my friend about it.	1	2	3	4	5
5. If my friend moved away, I would miss my friend.	1	2	3	4	5
6. My friend thinks of fun things for us to do together.	1	2	3	4	5
7. My friend can bug or annoy me, even if I ask my friend not to.	1	2	3	4	5
8. If other people were bothering me, my friend would help me.	1	2	3	4	5
9. If I said sorry to my friend after a fight, my friend would still stay mad at me.	1	2	3	4	5
10. When I do a good job at something, my friend would be happy for me.	1	2	3	4	5
11. If my friend or I do something that bothers the other one of us, we can make up easily.	1	2	3	4	5
12. I think about my friend, even when my friend is not around.	1	2	3	4	5
13. My friend would help me if I needed it.	1	2	3	4	5
14. My friend and I go to each other's houses after school & on weekends.	1	2	3	4	5
15. My friend and I argue a lot.	1	2	3	4	5
16. My friend helps me, even when I am having trouble with something.	1	2	3	4	5
17. I can talk to my friend about things that I can't talk to others about.	1	2	3	4	5
18. I feel happy when I am with my friend.	1	2	3	4	5
19. Sometimes, my friend and I can sit around and talk about things like music, clothes, and things we like.	1	2	3	4	5
20. My friend and I disagree about many things.	1	2	3	4	5
21. My friend would stick up for me if someone was causing me trouble.	1	2	3	4	5
22. If my friend and I have a fight or argument, we can say "I'm sorry" and everything will be alright.	1	2	3	4	5
23. Sometimes my friend does things for me, or makes me feel special.	1	2	3	4	5

Appendix 7

Depression

Over the **last 1 week**, how often have you been bothered by any of the following problems?

	Not at all	***Several Days***	***More than half the days***	***Nearly every day***
Circle the answer				
Little interest or pleasure in doing things	0	1	2	3
Feeling down, depressed or hopeless	0	1	2	3
Trouble falling/staying asleep, sleeping too much	0	1	2	3
Feeling tired or having little energy	0	1	2	3
Poor appetite or overeating	0	1	2	3
Feeling bad about yourself – or that you are a failure or have let yourself or your family down.	0	1	2	3
Trouble concentrating on things, such as reading the newspaper or watching television.	0	1	2	3
Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual.	0	1	2	3
Thoughts that you would be better off dead or of hurting yourself in some way.	0	1	2	3

If you checked off any problem on this questionnaire so far, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	*Somewhat difficult*	*Very difficult*	*Extremely Difficult*
_____	_____	_____	_____

Appendix 8

UCLA Loneliness Scale Version 3

Appendix F

The UCLA Loneliness Scale – Version 3

1 = Never
2 = Rarely
3 = Sometimes
4 = Often

The following 20 questions describe how people sometimes feel. For each statement, please indicate HOW OFTEN you feel this way by entering in the number that corresponds to the response that best fits how you feel.

__ 1. Do you feel that you're "in tune" with people around you?
__ 2. Do you feel that you don't have friendships?
__ 3. Do you feel there is no one you can turn to?
__ 4. Do you feel alone?
__ 5. Do you feel part of a group of friends?
__ 6. Do you feel you have a lot in common with the kids around you?
__ 7. Do you feel that you are no longer close to anyone?
__ 8. Do you feel that kids don't have the same interests or ideas that you have?
__ 9. Do you feel outgoing and friendly?
__ 10. Do you feel close to people?
__ 11. Do you feel left out?
__ 12. Do you feel that your friendships with other are not meaningful?
__ 13. Do you feel that no one really knows you well?
__ 14. Do you feel isolated from others?
__ 15. Do you feel you can find friendship when you want it?
__ 16. Do you feel there are people around you who really understand you?
__ 17. Do you feel shy?
__ 18. Do you feel that people are around you but not with you?
__ 19. Do you feel there are people you can talk to?
__ 20. Do you feel there are people you can turn to?

Appendix G

Appendix 9

The Social Anxiety Scale for Adolescents

There are no right or wrong answer. Please answer each item as honestly as you can.

Use these numbers to show HOW MUCH YOU FEEL something is true for you:

1= Not at ll
2= Hardly Ever
3= Sometimes
4= Most of the time
5= All the time

1. I worry about doing something new in front of others	1	2	3	4
2. I like to do things with my friend	1	2	3	4
3. I worry about being teased	1	2	3	4
d. I feel shy around people I don't know	1	2	3	4
e. I only talk to people I know really well	1	2	3	4
f. I feel that peers talk about me behind my back	1	2	3	4
g. I like to read	1	2	3	4
h. I worry about what others think of me	1	2	3	4
i. I'm afraid that others will not like me	1	2	3	4
j. I get nervous when I talk to peers I don't know really well	1	2	3	4
k. I like to play sports	1	2	3	4
l. I worry about what others say about me	1	2	3	4
m. I get nervous when I meet new people	1	2	3	4
14. I worry that others don't like me	1	2	3	4
15. I'm quiet when I am with a group of people	1	2	3	4
16. I like to do things by myself	1	2	3	4
17. I feel that other's make fun of me	1	2	3	4
18. If I get into an argument, I worry that the other				

person will not like me				
19. I'm afraid to invite others to do things with me because I worry about what they might say	1	2	3	4
20. I feel nervous when I am around certain people	1	2	3	4
21. I feel shy even with peers I know well	1	2	3	4
22. It's hard for me to ask others to do things with me	1	2	3	4

Appendix 10

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale

Below is a list of 10 statements about your general feelings about yourself. If you strongly agree with the statement, click Strongly Agree. If you agree, click Agree. If you disagree, click Disagree. If you strongly disagree, click Strongly Disagree.

1. On the whole I am satisfied with myself

Strongly Agree Agree Disagree Strongly Disagree

2. At times, I think I am no good at all

Strongly Agree Agree Disagree Strongly Disagree

3. I feel I have a number of good qualities

Strongly Agree Agree Disagree Strongly Disagree

4. I am able to things as well as most other people

Strongly Agree Agree Disagree Strongly Disagree

5. I feel I do not have as much to be proud of

Strongly Agree Agree Disagree Strongly Disagree

6. I certainly feel useless at times

Strongly Agree Agree Disagree Strongly Disagree

7. I feel that I'm a person of worth, at least on an equal plane as others

Strongly Agree Agree Disagree Strongly Disagree

8. I wish I could have more respect for myself

Strongly Agree Agree Disagree Strongly Disagree

9. All in all, I am inclined to feel like a failure

Strongly Agree Agree Disagree Strongly Disagree

10. I take a positive attitude toward myself

Strongly Agree Agree Disagree Strongly Disagree

Appendix H